THE LEARNING AND DEVELOPMENT OF NON-TRADITIONAL WOMEN WITHIN SOCIAL CONSTRUCTIVIST 3D IMMERSIVE ENVIRONMENTS

A Dissertation
by
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ABSTRACT

THE LEARNING AND DEVELOPMENT OF NON-TRADITIONAL WOMEN WITHIN SOCIAL CONSTRUCTIVIST 3D IMMERSIVE ENVIRONMENTS

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Many women who seek college degrees later in life enroll with some trepidation. These students, referred to in this study as non-traditional women, believe they are taking a risk when adding the role of student to their already demanding and challenging lives. The degree to which their learning and development is encouraged or hindered depends on the teaching and curricular approaches used by the faculty and by the learning environment itself.

Twenty-first century technology provides educators with the opportunity to try different modes of interaction to extend the traditional classroom, some of which non-traditional women may find particularly supportive. One such technology is constructivist 3D immersive environments, such as AET Zone, Department of Leadership and Educational Studies at Appalachian State University in Boone, North Carolina. In these types of social constructivist 3D immersive environments many non-traditional women find they are encouraged to take control of their learning and development in ways they have not experienced in more traditional face-to-face settings.

The purpose of this study was to examine the learning and development of non-traditional women within social constructivist 3D immersive environments that resemble the design and pedagogy of AET Zone. This phenomenological qualitative study examined the experiences of two non-traditional women enrolled in Appalachian State University's Instructional Technology/Computers MA Program. Three major themes emerged from the data analysis, including life experiences, ways of making meaning, and learning environments. The findings from this study indicate that the research participants found the following to be true of AET Zone, a social constructivist 3D immersive environment:

- Non-traditional women's learning and development can gradually be fostered by the tools and specific pedagogy found in AET Zone
- The synchronous and asynchronous tools found in AET Zone can provide the opportunity for non-traditional women to take control of their learning
- A sense of presence is crucial for some non-traditional women to interact and communicate within AET Zone
- AET Zone instructors who use Presence Pedagogy or P2 can be effective guides that encourage and support non-traditional women's

DEDICATION

I would like to dedicate this challenging, yet passionate and educational journey to my dad, Edmund Bill York, who once told me that I would never finish high school. Because of his continued love and support, I adopted the philosophy that our mistakes in life do not determine our goals, but present opportunities for success. Thanks dad, your wildcard finally beat the odds.

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I am grateful for the unconditional love and support I received from my family. Thank you for believing in me and understanding every time you heard me say, “Sorry, I can’t, I’m working on my dissertation.”

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CHAPTER I

Introduction

> When a woman (or anybody) with a proclivity toward connected knowing enters an environment that fails to recognize connected knowing as a legitimate way of knowing, she feels disconfirmed as a thinker. Such women may become highly adept in separate knowing, but, as they say, "it doesn't feel right." It feels lonely, ungenerous, fraudulent, and futile. Thus, it never becomes a 'me-voice'. It remains a separate voice, separate from the self. The me-voice, being ignored, may fail to develop further or may even wither away. (Clinchy, 1990, p. 65)

Historically, education in the United States was designed and created by men for men. In 1636, Harvard College was founded by a group of educated men with the intention of training men for the ministry. Aleman and Renn (2002) reported that until the 1820s and 1830s, men were considered the primary population for colleges while social and institutional restrictions were placed on women's education. Over the years, more and more opportunities for education were provided for women. According to Brock (2010), between 1970 and 2005, gender balance reversed in college enrollment to include more female than male students. Substantial research has been conducted on the needs and interests of these women.

Many non-traditional aged women, over the age of 25, delay enrollment in a master's degree program, work full-time while attending school part-time, and have dependents including a child and a spouse. These women, referred to henceforth as nontraditional women, are motivated by self-improvement and self-actualization and see a college degree as an important vehicle for achieving those goals (Aleman & Renn, 2002; Bauer & Mott, 1990; Clayton & Smith, 1987; Shank, Winchell, & Myers, 2001). They also enroll to enhance their career choices. These women have one or more of the following characteristics: are over the age of 25, delayed their enrollment in a master's degree program, work full-time while attending school part-time, and have dependents including a child and a spouse (Aleman & Renn, 2002; Choy, 2002; Horn & Carroll, 1996; Hsu & Hamilton, 2010).

Research by Aleman and Renn (2002), Benshoff and Lewis (1992), Hooper (1979), and Terrell (1990), has indicated that for a number of years many non-traditional women who return to school must deal with issues of low self-esteem, a feeling of guilt about being in class rather than with their children, and insufficient support from family members. Additionally, learning in formal educational settings may be somewhat of a struggle for these women who have been absent from formal education for an extended period of time. One problem that non-traditional women encounter is scheduling. The vast majority of higher education institutions recruit non-traditional learners, but many still cater to traditional-aged students by continuing to schedule the majority of classes in face-to-face classrooms. Chao, DeRocco, and Flynn (2007) reported that even today, the "traditional structure and organization of many higher education institutions are failing to serve adult learners well" (p. 3).

According to Furst-Bowe and Dittmann (2001), "Programs offered via distance learning technologies may offer adult female students greater access to academic programs and increased flexibility in scheduling their coursework" (p. 405). Sullivan (2001) examined the findings of a study conducted by The Connecticut Distance Learning Consortium (CTDLC) that reported significant differences between the "way male and female students identified the strengths and weaknesses of the online environment" (p. 805). The researcher reported that online courses benefit a wide variety of students, but especially non-traditional female students that are responsible for children and family. Sullivan's (2001) analysis found an important aspect of the CTDLC study was the a portrait of "nontraditional female college students often juggling work, school, and family—and online courses making that easier" (p. 814).

Ibrahim and Silong (2000) asserted that the types of flexible learning non-traditional women seek can be found in some 3D immersive environments. Bronack, Cheney, Riedl, and Tashner (2008a) reported that "Virtual worlds are 3D virtual reality systems through which participants—using digital representations of themselves called avatars—communicate and interact with both content and each other" (p. 261). Bronack, Riedl, and Tashner (2006) found that "virtual worlds offer participants a sense of presence, immediacy, movement, artifacts, and communications unavailable within traditional Internet-based learning environments" (p. 220). Research by Hsu and Hamilton (2010), Huang (2002), and Palloff and Pratt (2007) reported that many 3D immersive environments can produce effective learning.

As reported in Campus Technology (2006), in 2001, several members of Appalachian State University's Department of Leadership and Educational Studies (LES), who were

aware of the importance of moving beyond traditional classroom design, initiated the AET Zone project. According to Bronack et al. (2008b), the design and growth of AET Zone was influenced by the Appalachian State University, Reich College of Education (RCOE) Conceptual Framework that consists of five principles based on Vygotsky's (1978) theory of social constructivism:

- Learning occurs through participation in a Community of Practice
- Knowledge is socially constructed and learning is social in nature in a Community of Practice Classroom
- Learners proceed through stages of development from Novice to Expert under the guidance of more experienced and knowledgeable mentors and among like-minded peers in the Community of Practice
- An identifiable knowledge base that is both general in nature and also specific to specialties emerges from focus activity within the Community of Practice
- All professional educators develop a set of Dispositions reflecting attitudes, beliefs, and values common to the Community of Practice (Bronack et al., 2008b, p. 60).

Bronack et al. (2008b) reported that the RCOE Conceptual Framework (2005) "serves as a powerful space through which effective learning communities may be formed and nurtured" (p. 60).

A community of practice, is "a group of people who share a common concern, a set of problems, or interest in a topic and who come together to fulfill both individual and group goals" (Cambridge & Suter, 2005). Previous research (Bronack et al., 2008b; Wenger, 1998)

reported that a community of practice encourages a student's gradual development from novice to expert while working with knowledge sharing instructors rather than lecturers.

In AET Zone students encounter a sense of presence or what Bronack et al. (2008b) describe as "a sense of being with others that is collaborative in nature, rather than a sense of the teacher being "'the authority'" and "'in charge'" (p. 61). Through the use of avatars and synchronous and asynchronous tools, social constructivist 3D immersive environments offer a sense of presence. Avatars encourage, but do not solely support, an effective environment for communication. According to Bronack et al. (2008a) "When it comes to communication, it is the ability to connect in real time with the person each avatar represents that differentiates virtual worlds form other online technologies" (p. 264). Additionally, many students discover that AET Zone provides an environment that supports their learning and development. While actively participating in communities of practice, many students discover social constructivist 3D immersive environments provide a rich environment for their learning and development.

Problem Statement

Research suggests that "social and economic forces" have resulted in increased enrollment of non-traditional students in higher education (Ross-Gordon, 2003, p. 26). According to Aleman and Renn (2002) this population of students has been the "fastest-growing sector in higher education since 1980" (p. 336). Demands are being placed on universities to meet the needs of this student population. In response to these demands, and others, many institutions such as Duke University (Young, 2010) and East Carolina University (Hodge, Tabrizi, Farwell, & Wuensch, 2007) are employing social constructivist 3D immersive environments. Yet even with the influx of non-traditional women within the

higher education community, there has been relatively little research conducted on how social constructivist 3D immersive environments can foster their learning and development.

Aleman and Renn (2002) examined what they termed "chilly classroom literature" where faculty unconsciously contributed to a classroom environment that disadvantages women (pp. 284-285). Belenky, Clinchy, Goldberger, and Tarule (1997) investigated why "women often feel alienated in academic settings and experience 'formal' education as either peripheral or irrelevant to their central interests and development" (p. 4). Tarule (1988) studied the learning experiences of non-traditional women and found that "academic settings are often insensitive to the particular needs of returning women" (p. 19). Tarule examined three different perspectives that adult female learners may come from when dealing with certain life situations: voice, connected knowing, and developmental position (1988, p. 20). Zuga (1999) claimed "the dominant culture in Western society is the male culture, not by size but by influence" (pp. 1-2). In support of women seeking careers in the field of technology, many feminists claim that women function in different ways than men. In discussions of cultural differences, contemporary feminists are one group that is trying to develop "alternate theory and scientific methodology based on the difference of women" (Zuga, 1999, p. 4). The aforementioned studies focus on women, yet studies have not been conducted that specifically focus on the learning and development of non-traditional women within 3D immersive environments.

This study addresses the learning and development of non-traditional women within social constructivist 3D immersive environments. It is an exploration of how certain tools and pedagogy promote the learning and development of these women. Additionally, there is an effort to determine what takes place in social constructivist 3D immersive environments

as opposed to face-to-face classrooms that influences the learning and development of non-traditional women.

Research Questions

The research questions for this study consisted of a single overarching question and one supplemental question. The primary research question was "How is the learning and development of non-traditional women fostered by the particular tools and specific pedagogy used within a social constructivist 3D immersive environment?" The secondary research question was "What happens in a 3D social constructivist 3D immersive environment, but not in the face-to-face classroom, that affects the learning and development of non-traditional women?"

Methodology

This qualitative study examined the ways that AET Zone supported the learning and development of non-traditional women. A phenomenological approach was used "to gather 'deep' information and perceptions through inductive, qualitative methods such as interviews and participant observation [collective case study methods], and representing it from the perspective of the research participant(s)" (Lester, 1999, p. 1). As suggested by Heron (1992), I opened my eyes, kept them open, looked and listened, and did not get blinded; as the primary investigator, I sustained an intuitive grasp of what was there.

Significance of the Study

While many non-traditional women find it difficult to move beyond traditional ways of learning, others may discover that many social constructivist 3D immersive environments actually motivate them to learn. Social constructivist 3D immersive environments can offer a space for a student's transformation from the "other" to an active member of a learning

community or community of practice. An exploration of the life experiences non-traditional women bring to social constructivist 3D immersive environments will add to the knowledge base about how this environment can be particularly helpful to this population. While research that examines the experiences of students and/or instructors who use technology (Alsgaard, 2001; Bronack et al., 2008b; Campus Technology, 2006; Cheal, 2009; Dearnley, Dunn, & Watson, 2006; Furst-Bowe & Dittmann, 2001; Ibrahim & Silong, 2000; Mayrath, Traphagan, Jarmon, Trivedi, & Resta, 2010; Sullivan, 2001; Tello, 2007; Warburton, 2009) has been conducted, research that focuses specifically on non-traditional women's learning and development within social constructivist 3D immersive environments is needed.

With the influx of non-traditional women in higher education institutions, research needs to be conducted that focuses on this population of students. Awareness of the knowledge these women obtained from life experiences and addressing their specific needs is required to effectively work with these women in achieving their academic goals.

Definition of Terms

AET Zone – AET Zone is a social constructivist 3D immersive environment "used by faculty members and students in the Department of Leadership and Education al Studies in the Reich College of Education at Appalachian State University" (Bronack et al., 2008b, p. 59).

Avatar – A digital representation of a person in a virtual world.

Connected Knowing – Connected knowing "builds on the subjectivists' conviction that the most trustworthy knowledge coms form personal experience rather than the pronouncements of authorities" (Belenky, et al., 1997, pp. 112-113). Women that perceive themselves and approach the world from connected knowing believe that truth is "personal, particular, and grounded in firsthand experience" (1997, p. 113).

Immersive – The impression that someone has of being somewhere while, in reality, he or she is physically in another place.

Learning Community - A learning community or community of practice, is "a group of people who share a common concern, a set of problems, or interest in a topic and who come together to fulfill both individual and group goals" (Cambridge & Suter, 2005).

Presence Pedagogy - Presence Pedagogy (P2) is an online model of teaching and learning that is grounded in social constructivist theory. Strategies used in P2 promote interaction and collaboration.

Non-Traditional Women – For the purpose of this study, non-traditional have the following characteristics: they are over the age of 25, delayed enrollment in a master's degree program, worked full-time while attending school part-time, and had dependents including a child and a spouse.

Organization of the Study

Chapter I briefly introduces education and looks at motivators that encourage non-traditional women to return to higher education. Additionally, this chapter includes a discussion of distance education, social constructivist 3D immersive environments, AET Zone, learning communities, and sense of presence. Additionally, this chapter includes the problem statement, research questions, methodology, significance of the study, definition of terms, and organization of the study.

Chapter II is an examination of the literature including education and non-traditional women, adult learner development theories, higher education institutions, non-traditional students and technology, and educational uses of social constructivist 3D immersive environments. The conceptual framework for this study concludes Chapter II.

Chapter III provides an overview of the research methodology including in-depth descriptions of the methods and design. An explanation of the following is included: online ethnography, constructivism, feminism, theoretical perspective, research questions, research design, design rationale, role of the researcher, ethical issues, research participants, and research participant selection. Additionally, this chapter includes IRB procedures, site selection, methods of data collection, interview formats, participant observation formats, personal narratives, data coding, data analysis, ant trustworthiness.

In Chapter IV the research questions are addressed and there is an introduction of the major themes and sub-themes that surfaced during this study. An analysis of the data gathered during the research process is included, as well as a discussion of the findings from the research process that influenced responses to the research questions.

Chapter V contains an analysis of the major themes, a review of the literature gaps, and limitations of the study. Additionally, the conceptual framework is revisited and implications of the study and suggestions for further study are included.

CHAPTER II

Review of Related Literature

The purpose of this study was to examine the learning and development of non-traditional women within social constructivist 3D immersive environments where pedagogy is considered "to be the set of skills, abilities, and dispositions one employs when helping others learn" (Bronack et al., 2008b, p. 61). The chapter briefly introduces education (Aleman & Renn, 2000) and an examination of non-traditional women including women's enrollment in higher education (Aleman & Renn, 2000), non-traditional women (Flannery & Hayes, 2000; Ross-Gordon, 2003; Shank, Winchell, & Myers, 2001), adult learner development theories (Belenky et al., 1997; Cross, 1981; Tarule, 1988), higher education institutions (Chao, DeRocco, & Flynn, 2007; Hsu & Hamilton, 2010), non-traditional students and technology (Huang, 2002; Ibrahim & Silong, 2000; Sullivan, 2001), educational uses of social constructivist 3D immersive environments (Bronack, 2006; Bronack et al., 2008b; Eschenbrenner, Nah, & Siau, 2008; Giulio, 2010; Warburton, 2009), and features that are found in effective social constructivist 3D immersive environments (Bronack et al., 2008b). The conceptual framework for this study concludes the literature review.

Education and Non-Traditional Women

Literature focused on the history of education is important to this study's research questions because it contains information that describes the original purpose of education, to teach males, and explains where it is today, teaching both men and women. Aleman and

Renn (2002) reported that historically education in the United States was designed and created by men for men.

In 1636, a group of educated men with the intention of training men for the ministry founded Harvard College. Until the 1820s and 1830s, men were considered the primary population for colleges while social and institutional restrictions were placed on women's education. In the 1830s and 1840s, the development of conventional schooling and the rise of business opportunities for men opened the teaching field to women. At the same time, "the revivalist spirit of the era also stimulated a need for missionaries" (Aleman & Renn, 2002, p.5). According to Aleman and Renn (2002), Troy Mount Holyoke Seminaries and Antioch and Oberlin colleges embraced the opportunity to educate women to fill these two new roles.

In the 1870s, a compelling number of women's higher education institutions were created including, "Mount Holyke, Smith, Wellesley, Radcliffe, Barnard, Vassar, and Bryn Mawr" (Aleman & Renn, 2002. p. 7). The first deans of women were hired in 1892 by the Universities of Chicago, Michigan, and Wisconsin. These women were responsible for the "health, virtue, and on-campus housing of woman students and attempted to ensure their proper supervision" (2002, p. 251). It was well into the twentieth century before women were permitted to enroll in the private sector of all-male colleges and acceptance of co-education increased.

In 1960, there was an emergence of a new type of female students in higher education, referred to as non-traditional women. This population has been the "fastest-growing sector in higher education since 1980" (Aleman and Renn, 2002, p. 336).

Literature that examined various aspects of non-traditional women is essential to this study's research questions because it provides a better understanding of who these women

are and why they decided late in life to enroll in higher education courses. Issues related to non-traditional women, such as their characteristics, needs, and higher education teaching preferences are presented in the literature (Ross-Gordon, 2003). Attention is called to the insufficient amount of facts and understandings that pertain to the learning, education, and voice of non-traditional women (Flannery & Hayes, 2000). Additionally, the educational needs of non-traditional women are addressed (Shank, Winchell, & Myers, 2001).

Ross-Gordon (2003) explored the growing population of non-traditional students in higher education. Attention was called to the characteristics of non-traditional students as reported in previous studies, as well as the social and economic forces that influenced non-traditional women's decision to return to school. Such forces included "aging and increasingly diverse populations, the rapid pace of technological change, and the constantly shifting demands of the workplace in this era of a global economy" (2003, p. 26). Non-traditional students, unlike traditional students, assumed multiple roles including employee, spouse, parent, caregiver, and community member while enrolled in higher education classes. Because of these multiple roles, non-traditional students were most likely to look for higher education programs that were flexible in time and location for both course completion and to obtain important student services. Regis University and the University of Phoenix were identified by Ross-Gordon (2003) as higher education institutions that addressed the needs of non-traditional students by moving beyond traditional pedagogy and delivery of educational programs to online programs.

Flannery and Hayes (2000) used a feminist approach to establish a framework for the contents of *Women as Learners: The Significance of Gender in Adult Learning*, and as

perspective to evaluate current interpretations of women's learning. Four key assumptions taken from feminist scholarship influenced this perspective:

- Women's learning must be understood and valued in its own right;
- Women's learning must be understood within a broader social context that should encompass the social determinant of gender roles and norms;
- The diversity of women's lives and learning should be recognized as much as the similarities;
- Efforts are needed to overcome the limitations that continue to be placed on women's learning opportunities and outcomes. (Flannery & Hayes, 2000, p. xii)

Women as Learners: The Significance of Gender in Adult Learning (Flannery & Hayes, 2000), was intended to serve four purposes: to gather knowledge regarding women and their learning in one location, to place the learning experiences of women within the framework where women live, to call attention to an understanding of women's diversity, and to suggest further research and practice based on the researchers' critical assessment of current literature.

As professors of adult education, Flannery and Hayes (2000) were amazed and concerned that there was so little research focused on women's learning in the field of adult education. This text is an exploration of how women learn and their experiences in education; it takes into consideration the significance of identity, self-esteem, social world, and power in what and how women learn. Additionally, the authors examine the sociocultural context of women's lives, and recognize the similarities and differences among women pertaining to age, race, class, and sexual orientation.

Research conducted by Flannery and Hayes (2000) began with a masculine model of science based on "traditional forms of academic analysis" which was not working (p. 19). This study addresses the learning and development of non-traditional women within social constructivist 3D immersive environments. An exploration of how certain tools and pedagogy promote the learning and development of non-traditional women takes place. Additionally, there is an examination to determine what takes place in social constructivist 3D immersive environments as opposed to face-to-face classroom that influences the learning and development of non-traditional women. The assumption was that "it was possible to gather a body of evidence, evaluate it with traditional forms of academic analysis and critique, and draw conclusions about women's learning that could be applied by other researchers and educators" (Flannery & Hayes, 2000, p. 19). Flannery and Hayes (2000) moved beyond traditional research paradigms and examined different sources of literature about women that better embodied the learning experiences of women. Priority was given to women's personal narratives that reflected their learning inside and outside of formal education. According to Flannery and Hayes (2000):

> These stories were more fundamentally about women trying to learn new gender roles at the age of sixty-five or older, about women trying to figure out who they were because they had been taught that girls and women were to obtain their identities from their relationship with others. The stories were about women learning together in ways that joined their spirits as well as their minds. Women learned and were empowered in caring study circles; they learned at play and while singing; they learned through meditation. Affective and emotional components of learning; intuition; learning in and through life; connections between personal and social

> influences on learning; contexts of learning; historical, social, ethnic, and economic influences on the learner—all these multiple, interconnected themes were vital to these women's learning and could not be separated from their lives. (pp. 20-21)

Flannery and Hayes (2000) concluded that an insufficient amount of research has been conducted on women's learning and personal narratives. Additionally, personal narratives, an essential component to interpreting and understanding women's informal and formal learning experiences, were omitted.

A review of social contexts by Flannery and Hayes (2000) located women's learning in various academic and nonacademic settings, including formal educational institutions, the workplace, the home, the family, and the community. An examination of women's learning in formal education emphasized that even though women comprise the majority of higher education students, there "continues to be considerable variation in women's participation in different areas of study" (2000, p. 28). Women who participate in higher education courses do not enroll in programs often portrayed as masculine subjects, such as math.

Flannery and Hayes (2000) explored the interrelationships of women's identity, self-esteem, and learning. Factual data supported the belief that "identity develops through internal and external influences" and that the most basic form of self-esteem is associated with "how people feel about their identities" (2000, p. 55-56). It was determined that gender identity was assigned at birth and supported by various people including parents, grandparents, friends, teachers, babysitters, and relatives. Importance was placed on classroom cultures and home experiences that contributed to women's "self-doubt when learning" (2000, p. 57). This study demonstrated that educators need to acknowledge and assist women in becoming more aware of their achievements outside formal educational

settings, to authenticate this learning and associate it with learning that took place in the classroom.

Flannery and Hayes (2000) argued that voice was effective and influential in women's stories about learning and in academic literature focused on women's learning. To support this claim, a reference was made to Belenky et al. (1997), "Voice implies communication and connection with other people, an orientation to relatedness that has frequently been associated with women in dominant United States culture" (1997, p. 80). Many feminist educators believe that talk is one way of taking part in collective knowledge creation, a process that has been recognized in the past for the exclusion of women.

Shank, Winchell, and Myers (2001) were interested in the growing market and particular educational needs of non-traditional learners. This study included 197 non-traditional students from a mid-western university. Research data confirmed, "Studies have shown that nontraditional learners are motivated by career concerns and the quality of education versus the social climate of campuses" (2001, p. 64). Traditional family frameworks have changed and resulted in women over 25 years of age returning to higher education in record numbers. The level of enrollment is contingent on a woman's age. The older the woman, the better the chance of her enrolling in school on a part-time basis as opposed to full-time: "Over 60% of the non-traditional women in the sample wanted to enroll for courses on a part-time basis [because they were working] over 31 hours per week" (2001, p. 66). The study conducted by Shank et al. reports that the degree women seek is dependent on their ages and that women return to college to advance their knowledge base and to determine possible career opportunities. A review of adult learner development theories provides more insight into who these women are and why they returned to college.

Adult Learner Development Theories

Literature focused on adult learner development theories is important to this study's research questions because it addresses non-traditional women as adult learners—who they are and why they are higher education students. Two important strands of research include: phase theory in which stages are age linked (Cross, 1981) and developmental stage theory in which stages depict one's evolution from dualistic or categorical ways of thinking and construction of reality to more complex ways of doing so (Belenky et al., 1997; Tarule, 1988). Rich data can lead to a better understanding of non-traditional women's ways of knowing and the gaps and problems many of these women face. Previous research examines women's ways of knowing and the ways in which some women view reality from different perspectives. Importance is placed on how "women view reality and draw conclusions about truth, knowledge, and authority" which strongly influences their learning and development within different environments (Belenky et al, 1997, p. 3).

Cross's (1981) innovative work was based on comprehending the exceptional capabilities of the adult learner and examining how age was linked to the stages a human being experienced during his or her lifetime. In this study, the researcher informed higher education communities of critical issues associated with adult learners. Valuable insight into four questions was presented: "Who participates in adult learning? Why do they participate or, alternatively, why not? and what and how Adults Learn—and Want to Learn?" (Cross, 1981, p. xii). Central to this work was building on past and present knowledge; to create a tentative framework, the Characteristics of Adults as Learners (CAL), for adults as learners. The CAL model consisted of two classes of variables: 1) personal characteristics and 2) situational characteristics. Personal characteristics included aging, life phases, and

developmental stages strongly affected the administration of learning (i.e., schedules, locations, procedures). Situational characteristics consisted of part-time versus full-time learning and voluntary versus compulsory learning; these characteristics pertained to the fact that most adult learners in college were more self-directed and brought a more problem-centered orientation to the learning experience.

Belenky et al. (1997) were interested in human development and specifically looked at the gaps and problems many women faced in their learning and development. Participants included a diverse group of 135 women of different ages, backgrounds, and educational histories. The life stories of these women were studied in an effort to form a better understanding of how they viewed themselves, their minds, and the world in which they lived. In this landmark study, a developmental theory was formulated that consisted of five different epistemological perspectives that reflected the basic assumptions "from which women viewed reality and drew conclusions about truth, knowledge, and authority" (1997, p. 3). The perspectives included silence, received knowledge, subjective knowledge, procedural knowledge, and constructed knowledge.

Women in the perspective of silence preferred to be shown and/or directed; they perceived words as weapons: "Words were used to separate and diminish people, not to connect and empower them" (Belenky et al., 1997, p. 24). These women had a minimal amount of formal education and experienced failure in such settings.

Women in received knowing essentially learn by listening to authority figures. Belenky et al. (1997) reported that these women "have little confidence in their own ability to speak and believe that the truth is spoken by others" (1997, p. 37). The received knowers were unable to think for themselves.

At the next level, subjective knowing, women primarily learn through intuition and through listening to their inner voices. Subjective knowers take truth to be "personal, private, and subjectively known or intuited" (Belenky et al., 1997, p. 54). Many of the women at this level had dropped out of school at an early age and returned as adult learners to earn degrees or to obtain new skills.

In procedural knowing, women were committed to learning by applying objective procedures for obtaining and communicating knowledge. As procedural knowers, they believed "intuitions may deceive and things are not always what they seem to be" (Belenky et al., 1997, pp. 93-94).

In constructed knowing, women view knowledge as contextual. This new way of understanding themselves and their world began "as an effort to reclaim the self by attempting to integrate knowledge that they felt intuitively was personally important with knowledge they had learned from others" (Belenky et al., 1997, p. 135). As constructed knowers, truth was viewed as a "process of construction in which the knower participates" (1997, p. 140). Constructed knowers developed a narrative sense of self and a high tolerance for internal contradiction. It was important for these women to find balance between their needs and the needs of others.

Tarule (1988) studied the learning experiences of non-traditional women and reported that "academic settings were often insensitive to the particular needs of returning women" (p. 19). Attention was called to three different perspectives that adult female learners may come from when dealing with certain life situations: voice, connected knowing, and developmental position. Tarule's study drew from two valuable sources—adult women's stories about their education and theory about women's learning. As the number of non-traditional women

continues to grow, it is essential that higher education institutions make changes that are beneficial to this student population.

Research consistently shows that good education fosters development, as depicted by Belenky et al. (1997).

Higher Education Institutions

Literature focused on higher education institutions (Chao, DeRocco, & Flynn, 2007; Snyder & Hoffman, 1999) is meaningful to this research study's question because it calls attention to the increased enrollment of non-traditional women, obstacles that non-traditional women face, and institutions' responsibility to meet the needs of this population of women. According to Snyder and Hoffman (1999), it was estimated that 26% of the total population of college students was comprised of non-traditional women. Chao et al. (2007), report that to address the increased non-traditional women study body, many institutions offer new programs, various classroom settings, flexible hours and locations, and pedagogy that encourage non-traditional students' learning and development.

Hsu and Hamilton (2010) reported that higher education institutions have been dealing with the demands of the increased enrollment numbers of non-traditional women. It has been reported that this student population has strongly influenced the mission and financial position of various institutions. However, many higher education policies do not take into consideration the obstacles many non-traditional students encounter, such as driving distance and financial problems.

Non-traditional students have been recruited by numerous higher education institutions, yet a good portion of these schools "are failing to serve adult learners well" (Chao et al., 2007, p. 3). Many of these schools continue to accommodate traditional students

by scheduling classes in face-to-face classrooms while ignoring the type of classroom environments that would work best for non-traditional students. Chao et al. (2007) acknowledge that a growing population of "working adults have responded to clear economic signals that they will need more education and training to do well in today's economy" (p. 6). The needs of non-traditional students, such as flexible and convenient online education, have not sufficiently been met by some of the same institutions that sought to enroll them. Through the use of technology, higher education institutions can offer online learning environments that are conducive to the learning and development of non-traditional women.

Non-Traditional Students and Technology

Literature that addresses non-traditional students and technology is important to this study's research questions because it focuses on whether technology hinders or fosters non-traditional women's learning and development. Sullivan (2001) reported that students value online classes, especially non-traditional women; he discovered that it is possible for online classes to be more inviting to females and Huang (2002) explored how adult learners benefit from online courses. Such studies found that the approaches found within some online social constructivist 3D immersive environments can reduce barriers adults face in self-directed learning.

Sullivan (2001) reported that students, especially non-traditional women, value online courses. In a survey consisting of 195 male and female distance education students, the researcher posed two questions: "Is there anything about the online classroom that has made it easier for you to learn, achieve your academic goals, or participate in class discussions (as compared to a traditional classroom)?" and "Is there anything that has made it harder?" (2001, p. 806). According to Sullivan, "80 out of 157 women (50%) and 18 out of 38 men

identified ‘flexibility’ as a major positive factor” (2001, p. 807). Regarding face-to-face interaction, more women than men reported that online environments were more welcoming for shy and quiet students than face-to-face classrooms. Many female participants acknowledged that without online courses, it would be difficult to achieve their academic goals.

Some traditional classrooms may resemble masculine formats and come across as unfriendly to many women. However, online learning environments can be designed to be “more welcoming—and less ‘chilly’—for female students” (Sullivan, 2001, p. 811). This study portrays non-traditional female college students as people who juggle work, school, and family; the flexibility of online courses makes their lives much easier.

Huang (2002) explored the significance of constructivism within online learning environments in relation to adult learners. The study was conducted to “develop conceptual insights of online learning for enhancing the teaching and learning environments” (2002, p. 28). Early on, the researcher established an association between constructivism and adult learning theory. An in-depth exploration of how online learning benefited adult learners took place and included a detailed review of theories including constructivism (Dewey, 1916; Piaget, 1973; Vygotsky, 1978), adult learning theory (Brookfield, 1995; Lieb, 1999), and online technologies (Bruner, 1966; Chen, 1977; Huang, 2000; Jonassen, 2000). Huang (2002) claimed that “online technologies are gradually decreasing the barriers of traditional distance education comprised of interactive or communication problems” (p. 34). This study demonstrates that the fundamentals of constructivism support the creation of effective learning environments for online students.

Educational approaches found within some online and social constructivist 3D immersive environments can reduce the barriers adults encounter in self-directed learning. Ibrahim and Silong (2000) presented an examination of Malaysia's first social constructivist 3D immersive environment, Universiti Tun Abdul Raza (UNITAR), created in 1998. The university supported "self-directed lifelong learning among Malaysian working adults" at the undergraduate and graduate levels (Ibrahim & Silong, 2000, p. 4). Importance was placed on andragogy, which consists of learning strategies for effectively working with adult learners. According to Ibrahim and Silong (2000):

> There are several assumptions about self-directed learning. Here the human being is assumed to grow in capacity and need to be self-directing as an essential component of maturing. The learner's experience becomes an increasing rich resource for learning which should be exploited along with the resources of experts. Self-directed learning assumes that individuals become ready to learn what is required to perform their evolving life tasks or to cope more adequately with their life problems. Each individual therefore has a different pattern of readiness. Learning orientation is task or problem centered, and therefore learning experiences should be organized as tasks-accomplishing or problem-solving learning projects. Self-directed learning also assumes that learners are motivated by internal incentives, such as self-esteem, the desire to achieve, the urge to grow, the satisfaction of accomplishment, the need to know something specific and curiosity. (p. 8)

Ibrahim and Silong (2000) found that a student's life experiences are resources for self-directed learning. Additionally, readiness for this type of learning may vary, depending on the student's maturity and preparedness to deal with life problems.

Self-directed learning assumes that "student learners are motivated by internal incentives, an such as self-esteem, the desire to achieve, the urge to grow, the satisfaction of accomplishment, the need to know something specific and curiosity" (Ibrahim & Silong, 2000, p. 8). Ibrahim and Silong (2000) noted that "adult students faced several barriers to being self-directed in carrying out their learning in a virtual environment" (p. 9). There are several barriers adult students encounter with self-directed learning within social constructivist 3D environments. Cross (1981) classified the barriers under three headings including situational, dispositional and institutional. Ibrahim and Silong (2000) provided a description of the barriers:

> Situational barriers are those arising from one's situation in life at a given time. These include lack of time due to job and home responsibilities, transportation problems, lack of childcare and so on. Dispositional barriers refer to one's attitude about learning and perception as a learner. This includes lack of confidence, the feeling of too old to learn and bored with learning. Institutional barriers are those erected by learning institution that include inconvenient schedule, compulsory attendance, restrictive locations and the like which discourage working adults from participating in educational activities. (p. 2)

Ibraham and Silong (2000) determined that adults entered the online programs because they were not required to quit their jobs or to set aside other obligations upon returning to school. This study highlighted the importance of adults' readiness to learn and programs that were flexible and maintained good technical support.

Educational Uses of Social Constructivist 3D Immersive Environments

Literature that focuses on educational uses of social constructivist 3D immersive environments is essential to this study's research questions because it explains how the design and features of such higher education environments can produce effective teaching and learning. Research conducted by Eschenbrenner, Nah, & Siau (2008) reports that important components of social constructivist 3D immersive environments in education are interaction and engagement. According to Bronack et al. (2006; 2008b) AET Zone, a higher education social constructivist 3D immersive environment, provides space and tools for members to work together. Giulio (2010) reported that Teleplace, a social constructivist 3D immersive environment workspace offers various communication tools with multi-application and document sharing. Riedl (as cited in Korolov, 2010) found that Teleplace software, used to create the second iteration of AET Zone, includes significant collaboration capabilities and user-friendly functions such as document retrieval and object building. With the growth of technology within higher education, research (Warburton, 2009) suggests that the popularity of social constructivist 3D immersive environments is increasing; accompanying this increase are certain barriers such as pressure on the graphic capabilities and bandwidth that institutions must consider. Additionally, user's movements and actions can be delayed when too many objects are placed in close proximity to each other.

Eschenbrenner et al. (2008) studied the applications, benefits, issues, and opportunities within higher education social constructivist 3D immersive environments. The researchers pointed out that most educators maintain objectives that include "engagement, interactivity, collaboration, experimentation, and idea generation" and successful completion of these objectives has been a continuous challenge for those working in the field of

education (Eschenbrenner et al., 2008, p. 91). The introduction of social constructivist 3D immersive environment technology provided a space where educators could achieve their objectives. The benefits of social constructivist 3D immersive environments include "conducting educational activities in a risk-free environment, enhancements in collaboration and communication, engaging learners, and being able to utilize an alternative space for conducting courses and associated tasks" (2008, p. 95). Through simulated activity and collaboration, there is a greater likelihood that users may experience meaningful interaction and engagement when using a social constructivist 3D immersive environment.

AET Zone. Active Worlds software was employed by several members of Appalachian State University's Department of Leadership and Educational Studies in RCOE to create AET Zone, a social constructivist 3D immersive environment (Figure 1). AET Zone provides a space "where teachers and learners separated by distance can engage in the social activity of learning" (Bronack et al., 2006, p. 220). Members of this community "collaborate effectively" through the use of communication tools (Bronack et al., 2008b, p. 59).

Figure 1. AET Zone Glass Classroom

Within AET Zone, instructors and students are guided by the Appalachian State University, RCOE Conceptual Framework (2005) which is based on Vygotsky's theory of social constructivism and is conducive to creating and maintaining effective learning communities.

Teleplace. Teleplace (TP), formerly Qwaq Forums, is a secure social constructivist 3D immersive environment workspace that combines voice and video and chat communications with multi-application and document sharing. Giulio (2010) reported that members come together in real time to edit documents, experience voice and text applications, and work with related tools. Teleplace features influence interaction and communication while supporting self-directed learning.

As a result of the advanced collaboration capabilities offered by Teleplace, Appalachian State University's RCOE employed this software for its next iteration of AET Zone (Figure 2). According to Dick Riedl, Professor of Education at Appalachian State University, "The collaboration capabilities within Teleplace were so much more advanced than the virtual world technology we were currently using" (as cited in Korolov, 2010). AET Zone users place objects within Teleplace by enlisting 3D programs such as Google SketchUp; once a model is created the user simply drags and drops the object into a workspace.

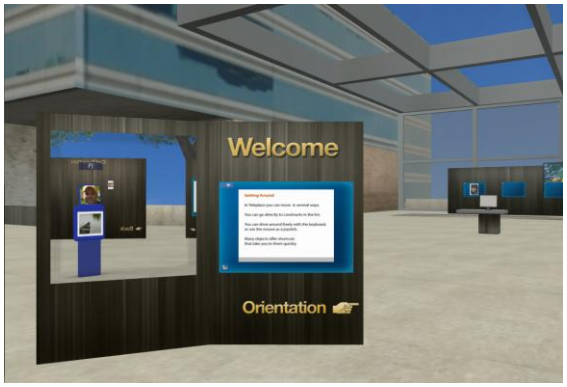

Figure 2. AET Zone – Orientation Station

The growth of technology including "broadband, wireless computing, video and audio technologies" is encouraging the use social constructivist 3D immersive environments (Warburton, 2009, p. 423). The adoption of these new technological learning environments in higher education is increasing, and while educators who use and designers developing social constructivist 3D immersive environments appreciate the potentials, they must also deal with the barriers.

Barriers. Three- dimensional immersive environments may present many barriers to educators and designers interested in placing "educational activities within a virtual space" (Warburton, 2009, p. 418). The visual experience is rendered in real time which provides users freedom of content creation which can lead to "stress on the graphic capabilities and bandwidth at the users end" (2009, p. 418). Technical problems include lag (when too many objects are in a certain place) that slow the users' movements and actions.

Features. Effective social constructivist 3D immersive environments include important features, such as synchronous and asynchronous tools, a sense of presence, and effective pedagogy.

Synchronous and asynchronous tools. Bronack et al. (2008b) found that synchronous (real time chat, audio, video conferencing, etc.) and asynchronous (discussion board, blots, etc.) tools are essential features within social constructivist 3D immersive environments that support "communication and interaction" (p.64). When used in any pedagogical framework, such tools provide the opportunity for students to collaborate, communicate, and take control of their learning. When using synchronous and asynchronous tools, instructors find it is necessary to develop new teaching methods that allow students to discover a sense of presence within the community.

Promotion of presence. According to Bronack et al. (2008b) the role of presence, when a member experiences a sense of being with others, is a fundamental feature that differentiates social constructivist 3D immersive environments from other online technologies. Through the use of avatars and synchronous and asynchronous tools, users may discover a sense of presence within this environment.

Pedagogy. Bronack et al. (2008b) reported that Presence Pedagogy (P2), a new online teaching model, is a suggested framework for effective pedagogy within social constructivist 3D immersive environments. P2 attempts to employ the "power of continuous, collaborative, and active learning that occurs when participants are made aware of each other and encouraged to share in the communal process of growth and development that results" (Bronack et al., 2008b, p. 65). This style of pedagogy encourages online instructors to forfeit control and become knowledge sharing mentors. P2 instructors may create learning activities, but students construct their own knowledge.

Conceptual Framework

This study seeks to form a better understanding of the learning and development of non-traditional women within social constructivist 3D immersive environments. Higher education institutions are experiencing an increased population of non-traditional women and in order to address their needs, many institutions are creating social constructivist 3D immersive environments. Moving forward with this phenomenon, it is imperative to know how is the learning and development of non-traditional women is fostered by the particular tools and specific pedagogy used within a social constructivist 3D immersive environment. Additionally, what happens in social constructivist 3D immersive environments, but not in the face-to-face classroom, that affects the learning and development of non-traditional women? Data collection methods including one-on-one interviews, participant observations, and personal narratives were used to obtain data that was needed to answer the research questions. The conceptual framework that informed this study was grounded in constructivism.

Constructivism, according to Crotty (1998), is an epistemological framework that suggests that each of us have a unique way of making sense of the world and each interpretation should be considered valid and respected by others. As reported by Rudestam and Newton (2007), constructivists believe that knowledge is built as the creation of an active and engaged mind. The constructivist paradigm supports the belief that there is no right way of viewing the world; human beings interpret or construct their world based on their own meaning-making and knowledge from prior experiences. Social constructivists (Vygotsky, 1978) believe that knowledge is constructed by learners through social interaction. Additionally, they take into consideration the research participants' views and the specific social contexts within they live; importance is placed on life experiences.

The social constructivist framework is appropriate for this study, as non-traditional women continue to enroll in higher education courses that meet within social constructivist 3D immersive environments where their learning and development is fostered by specific tools and pedagogy.

Summary

The literature review for this study demonstrates that research has been conducted that focuses on the following topics: education and non-traditional women, adult learner development theories, higher education institutions, non-traditional students and technology, and educational uses of social constructivist 3D immersive environments. Additionally, the review identified a gap between studies relating to non-traditional women and social constructivist 3D immersive environments. The gap is addressed in this study.

CHAPTER III

Methodology

Introduction

This chapter presents the methodology used to conduct a qualitative feminist ethnographic study. Descriptive in nature, qualitative research is "holistic and aims for a psychologically rich, in-depth understanding of a person, program or situation" (Rudestam & Newton, 2007, p. 37). My constructivist and feminist epistemology played a role in the examination of the learning and development of non-traditional women within social constructivist 3D immersive environments. To comprehend the human interaction and interpretation of the research participants, the approach to this study was based on symbolic interactionism, "a theoretical perspective that informs a range of methodologies, including some forms of ethnography" (Crotty, 1998, p. 3).

Online Ethnography

Online ethnography was an umbrella methodology for this research. According to Hine (2000), "The popularity of the ethnographic approach to online phenomena probably owes something to the accessibility of the field site to increasingly deskbound academics" (p. 22). Unlike traditionally ethnography which requires "physical travel to a place" (p. 43). Online ethnography extends beyond traditional notions of field and ethnographic study where "physical travel to a location and face-to-face interaction takes place (p. 43). Online ethnographic studies are situated in technological contexts such as social constructivist 3D immersive environments. Online ethnography "involves a researcher and participant

engaging in conversation and meaning making through repeated, revisited and jointly interpreted conversations that support reflection and revision" (Crichton & Kinash, 2003, para. 2). Unlike, traditional ethnography, online ethnography affords more data collection opportunities. For this study, various computer-based methods of data collection including live audio/video and private chat rooms were enlisted through the use of online ethnography, which allowed my immersion as a researcher into the online learning environment.

My epistemology and personal experiences predetermined that research conducted for this study would entail aspects of constructivism and feminism.

Constructivism

My belief is that "knowledge is not 'found' or 'discovered' from existing facts, but constructed as the invention of an active, engaging mind" (Rudestam & Newton, 2007, p. 35). People construct their own meaning and knowledge within certain contexts. Significant to this study was the meaning the research participants placed on their life experiences inside and outside of academia. Coming from the view of a constructivist, my belief mirrors the words of Crotty (1998) "that all knowledge, and therefore all meaningful reality as such, is contingent upon human practices, being constructed in and out of interaction between human beings and their worlds, and developed and transmitted with an essentially social context" (p. 42).

Feminism

Coming from a feminist standpoint, I attempted to gain knowledge by giving voice to non-traditional women—providing them the opportunity to identify and name their experiences. Similar to previous studies (Alsgaard, 2001; Belenky et al., 1997; Gilligan, 1982), women were placed at the center of this study to deepen my understanding of their

"experiences, histories, and knowledge" (Pillow, 2002, p. 18). Keeping in line with what feminists value as reported by Aleman and Renn (2002), I appreciated knowledge that was "interpreted by women and that has the potential to improve society for women" (pp. 114-115). My experiences as a woman were brought to the research; at the same time, personal views were not shared in order to avoid influencing the research participants. As noted by Hesse-Biber (2006), my aim was to "empower [non-traditional] women and give them a space to speak about their lives as seen from their perspective" (p. 55). Caution was taken to avoid reinterpreting the research participants' experiences, thoughts, and ideas according to feminist language.

Theoretical Perspective

The theoretical perspective chosen for this study was symbolic interactionism "an approach to understanding and explaining society and the human world, and grounds a set of assumptions that symbolic interactionist researchers typically bring to their methodology of choice" (Crotty, 1998, p. 3). The theory of symbolic interactionism, used in this study to identify social interactions, "argues that every person is a social construction, that people become persons through their interactions with society, using the vehicles of language, communication, and community" (Rudestam & Newton, 2007, p. 43).

Research Questions

The research questions consisted of a single, overarching question and one supplemental question. The primary research question was "How is the learning and development of non-traditional women fostered by the particular tools and specific pedagogy used within a social constructivist 3D immersive environment?" The secondary research question was "What happens in a social constructivist 3D immersive environment, but not in

the face-to-face classroom, that affects the learning and development of non-traditional women?"

Research Design

To address the research questions outlined in this study, I chose to employ a qualitative approach as suggested by Creswell (2007) and Maxwell (2005) because this method is suited for analyzing specific situations or people. This study is narrow, but by design highlights the key information needed to deepen my understanding of the research questions. Data was obtained through interviews, participant observations, and the research participants' personal narratives. The latter included the research participants' interpretations of their learning and development from childhood through adulthood. I examined the life experiences of non-traditional women inside and outside of formal education in order to understand and critique their learning and development.

Design Rationale

Glesne (2006) reported that the qualitative researcher seeks to comprehend and interpret how different members of a community create the world around them. As a qualitative researcher, I observed, asked questions, and interacted with the research participants while looking for patterns, but did not try to reduce the different interpretations to any preconceived notions. It was important for me to "let go of confounding variables" and accept the possibility of change in various aspects of the study including the intent, purpose, and/or questions due to the research participants' responses (Schram, 2006, p. 8). This allowed the direction of the findings not to be controlled by me but set by the research participants.

Role of the Researcher

As a qualitative researcher, participant observation required my being a participant in the culture or context I observed. It was vital to the research to be "immersed in the setting, its people, and the research questions" (Glesne, 2006, p. 70). I selected appropriate locations for the interviews with settings that were quiet, comfortable, and private. The locations provided anonymity for the research participants and led to highly effective meetings. As the primary investigator, my responsibilities included the developing questions pertaining to the topic; open-ended questions were created in order to leave room to move the conversation in the direction of the respondents' answers. It was important for me to build relationships with the research participants that were based on confidence and trust. Rapport was developed and maintained through respect for their traditions and cultures as non-traditional women. Additionally, I observed and "invested the time needed to understand" each woman as an individual (Glesne, 2006, p. 113).

Ethical Issues

As primary investigator in this study I interacted with the research participants, I was "friendly and empathetic," but remained neutral and uninvolved (Glesne, 2006, p. 12). The research participants were given a copy of the Lay Summary (Appendix B) which omitted any sign of coercion by stating that the participants could withdraw from the study at any time with no penalty. Additionally, I requested that they sign a Photograph, Video, and Audio Recording Consent – Release and Waiver form (Appendix C), which included what was expected of them, what the study was about, and any risks they might encounter during the study. The research participants' confidentiality was maintained throughout the study by the use of pseudonyms.

Research Participants

Two non-traditional female students enrolled in higher education courses that met in AET Zone were selected to participate in this study. A small number of research participants can be justified by appropriate and multiple sources of data and by my choosing "depth rather than breadth of understanding" (Glesne, 2006, p. 35). As a qualitative researcher I studied a small number of people, but delve more deeply into those individuals in order to generate a subjective understanding of how and why they perceived, reflected, interpreted, and interacted. Extended time was spent conducting interviews and participant observations in order to form an in-depth understanding of the learning and development of both women inside and outside of formal education.

Distinguishing features of the research participants included one or more of the following: they were over the age of 25, delayed enrollment in a master's degree program, worked full-time while attending school part-time, and had dependents including a child and a spouse.

Research participant selection. Participant selection began with my contacting the research participants' AET Zone instructors via email. Each instructor was asked to review the information in Appendix A (Research Description Provided to AET Zone Instructors). The instructors were asked to briefly explain to students enrolled in their AET Zone classes that volunteers were needed for a study that focused on the learning and development of non-traditional women within AET Zone. The students were to be informed the study required a commitment of approximately ten hours. I requested that the instructors provide my contact information to any students that interested in participating in the study.

Emails were received from seven female students interested in participating in the study. I responded to each email and requested the student schedule a future day, time, and place to meet with me in AET Zone or Skype. Seven students volunteered, and two were chosen at random to participate in this study. The small number of research participants presented me with the opportunity to closely examine these women and form and form a rich, in-depth, and very detailed set of understandings about their learning and development. The two women were contacted individually via email and notified of their selection. Each woman was given a fictitious name (Miranda and Shelly) to ensure her anonymity throughout the research process and dissertation.

Prior to the first participant observation, an email was sent to each research participant's AET Zone instructors that contained a brief note about the study and a description of the research (Appendix A). The instructors were asked to review, sign, and return the consent forms. Additionally, I requested that each instructor submit a copy of their roster so Non-Participant Consent to Observe forms (Appendix D) could be emailed to each non-participant just in case he or she was present during one or more of the participant observations. Upon receipt of signed Consent to Observe forms from the instructors and non-participants, participant observations were initiated.

IRB Procedures

In order to protect the rights and welfare of the research participants, a request for review by the Institutional Review Board (IRB) was submitted. Initial approval (Appendix H) was granted for this study, #10-0073, by Dr. Timothy Ludwig, on October 29, 2009. An IRB renewal for the study was granted on September 21, 2010 (Appendix I).

Site Selection

The site selected for this study was AET Zone; I was an active member of the forum, which allowed easy access to the research site. Though some may consider this backyard research, this assumption is challenged based on the fact that AET Zone has a continuously changing environment. According to Glesne (2006), when conducting backyard research "the groundwork for rapport is already established; the research would be useful for their professional or personal life; and the amount of time needed for various research steps would be reduced" (p. 31).

Methods of Data Collection

The research data for this study were drawn from two non-traditional women enrolled in higher education courses taught in a social constructivist 3D immersive environment at Appalachian State University, RCOE Leadership and Educational Studies, Boone, North Carolina.

The data were collected and analyzed through triangulation, using different methods such as in-depth interviews, participant-observations, and research participants' personal narratives in order to avoid bias and to obtain valid data. The collection consisted of interviews where open-ended questions were asked, observation strategies, such as understanding the cultural norms of the environment and shadowing the research participants, and personal narratives. Similar to previous qualitative studies (Creswell, 2007; Rudestam & Newton, 2007) focus was placed on the meaning the research participants made of their experiences and the circumstances in which they took place

During the data collection process an electronic field notebook was created for each participant where all documents could be stored in chronological order. Data collection

ended when new or relevant data did not emerge and I felt satisfied with the information obtained. By this time the observations were producing the same information, the interviews were becoming redundant, and sources were overlapping. According to Mason (2010), "There is a point of diminishing return to a qualitative sample—as the study goes on more data does not necessarily lead to more information" (p.1).

Interview Formats

During the course of the study, three one-on-one interviews with each research participant were conducted in AET Zone and Skype. Prior to each interview, a document (Appendices E, F, & G) was created that outlined the interview format. Interviews consisted of open-ended questions that allowed the interview process to be less structured and removed any prejudice that may have been brought to the table. At the conclusion of each interview, I transferred the video recording to Express Scribe and then transcribed the data for future analysis and coding.

The first interview focused on getting to know the research participant; we discussed her education, personal characteristics as a non-traditional woman, employment, and family life (Appendix E). The second interview was influenced by Belenky et al.'s perspectives and was devoted to the research participants' development of self, voice, and mind (Appendix F). The third interview concentrated on the research participants' learning and development within AET Zone (Appendix G).

Participant Observation Formats

The three participant observations enabled me to understand how the two interviewees carried out learning activities provided in AET Zone. I videotaped each participant observation and later reviewed the tapes. Working drafts were shared with the

research participants to validate and ensure that the interpretations correctly reflected their perspectives. I continued to analyze the participant observations in a timely manner for any influences of personal bias. Data was obtained through interaction with the research participants within AET Zone, but there was a limited amount of interaction in order for me to remain an objective researcher. Participant observations were processed in the same manner as the interviews.

The participant observations took place during regularly scheduled class times and group project meetings. At the beginning of the first participant observations the instructors introduced me; from that point on I was a silent and unacknowledged visitor. For the most part, the participant observations of both women closely resembled, if not mirrored, each other.

Personal Narratives

Narrative inquiry was enlisted for this study; it involved the "gathering of narratives" and focusing on the meanings the research participants ascribed to their experiences (Josselson, 2006, p. 4). To some extent, importance was placed on the research "participants' personal narratives" (Mitchell, 2007, p. 16).

The research participants wrote and submitted to me personal narratives that focused on their learning and development from childhood through adulthood. Being contemporary narratives, the women described events and expressed "emotions, thoughts, and interpretations" (Chase, as cited in Denzin & Lincoln, 2005, p. 656). Although the individual stories were unique, collectively the stories indicated that the women had a lot in common. Close readings of the personal narratives provided me with an in-depth view of each

woman's personal, social, and cultural experiences. Additionally, rich data was obtained for this study and contributed to the major themes that emerged during the data analysis.

Data Coding

Data coding presented the opportunity for me to organize the data collected, become aware of how it related, and view the emerging themes. As determined by previous research (Daniel & Onwuegbuzie, 2002; Glesne, 2006), to ensure confidence in the generated data coding, codes were applied in a uniform and consistent manner. Each major code identified a concept, a central idea that was placed in a category. I arranged the data until the collected parts became a connected whole. The documents in the electronic field notebooks were reviewed for organizational categories. I analyzed these and organized the data according to categories and themes that emerged. Next, I conducted a second reading of the documents and then sub-categories were noted and placed underneath the organizational categories in the comment boxes.

Data Analysis

The first steps in the data analysis was listening to the recordings and then transferring the recordings to Express Scribe, using a foot pedal to transcribe the data; this resulted in fifty-four hours of transcriptions. While this was a time consuming activity, it led to my gaining additional knowledge about the research participants' learning and development. I read the transcriptions and took notes, then "developed tentative ideas about ideas and categories" (Maxwell, 2005, p. 97).

Trustworthiness

Trustworthiness was held in the highest regard throughout this study. Early in the research process, I attempted to identify and eliminate possible validity threats to make sure

only genuine data was reported. For the purpose of this study, trustworthiness was synonymous with "credibility, transferability, dependability, and confirmability" (Denzin & Lincolnton, 2005, p. 24). To ensure authentic data was reported, research participants were encouraged to be open and honest when expressing their thoughts and feelings.

Providing the research participants with an opportunity to openly communicate, contributed to the trustworthiness between the research participants and me. Guba and Lincoln (1989) found that in this context, the participants' ways of making meaning and communicating brought strength to the data collection, analysis, and writing up of this study.

CHAPTER IV

Findings

Introduction

The purpose of this study was to better understand the learning and development of non-traditional women within social constructivist 3D immersive environments. In deriving the findings, social constructivism was used as a framework for understanding the experiences of the research participants.

In this chapter the research questions are addressed and the major themes and sub-themes that emerged during this study are introduced. Additionally, there will be an analysis of the data gathered during the research process and a discussion of the findings that answered the research questions. Data for each question will be organized around three major themes.

Research Questions Addressed

Data analysis addressed the research questions through the conceptual framework and from the perspectives of how the research participants' learning and development was fostered by the tools and pedagogy used within AET Zone, and what features were found in AET Zone that affected the research participants' learning and development.

Research Participants

The research participants' interview responses disclosed information about their learning and development that only they knew. Both women provided the primary financial support for their families and returned to school to earn a degree that would lead to an

increase in their current income. Each woman sought an educational program that offered an alternative to face-to-face classrooms and did not interfere with her responsibilities as a wife, mother, and employee. The location, convenience, and flexibility of the programs influenced their choice in schools.

During the participant observations, the women were active members of classes that met in AET Zone. They frequently used synchronous (live video and audio, and public chat) and asynchronous (notes and display panels) tools to communicate and collaborate with their instructors and peers.

Table I below lists the research participants' names, marital status, number of dependents including self and courses taking at the time of this study.

Table 1. Research Participants

Participant's Name (pseudonym)	Marital Status	Age	Number of Dependents	Higher Education Courses
Miranda	Married	45	3	2
Shelly	Married	42	3	2

At the time of this study Miranda was employed as a full-time high school instructor and completing an internship for her program of study. Shelly was employed by a North Carolina university and worked closely with new technology.

Major Themes

The following section presents a discussion of the major themes and sub-themes that emerged during the collection, critique, analysis, and interpretation of the research data.

Table 2. Major Themes

Themes	Sub-Themes
Life Experiences	Parents, Knowledge, & Age
Ways of Making Meaning	Communication & Identity

Life experiences. The research participants' life experiences emerged as a major theme in this study. Miranda and Shelly reported that initially their life experiences were difficult, but as they matured those experiences influenced their words and actions. These women were not born into the typical 1950s/1960s *Leave it to Beaver* families.

Parents. As described below, the research participants were affected by their parents' behavior. Miranda described how her parents' divorce affected her learning and development:

> As a child, I think my parents' divorce crushed not only me, but my dreams. You know, the happily ever after thing. I was hurt, scared, and confused; I wasn't sure why, but blamed myself. When dad moved out, I felt like it was me he was leaving, not mom. From that point on I was constantly seeking his love and approval. As a young adult, I was insecure and always looking for a man to make me feel better. I married three different times, two of the marriages failed; I'm still working on the third. I'm pretty sure my childhood didn't support my learning and development—instead of growing up I continued to think and behave like a child. I guess those experiences did contribute in some way to my learning and development because now I'm a very determined person; I tend to latch on to things, people and situations, until I get what I want.

Shelly was sure that her parents' behavior was detrimental to her learning and development, and admitted:

> I firmly believe that my childhood experiences had an impact on my learning and development, more negative than positive. Growing up, my family lived in a small community that was referred to as the bad part of town. I felt like an outcast because we literally lived on the wrong side of the tracks. Other children didn't like me and were constantly making comments about my frizzy hair and second-hand clothes. I cried myself to sleep almost every night. It was useless to try and talk to my parents, they both worked in scientific fields and could care less about feelings; they were totally unemotional. I learned how to close myself off from the rest of the world and avoid contact with most people. I'm pretty sure my parents' behavior was detrimental to my learning and development. If I had to say anything good to say it would be … well, maybe I learned how not to raise my daughter.

Knowledge. When the research participants reflected on their life experiences, their comments included the knowledge gained from those experiences. Miranda reported that the knowledge she gained from life experiences could only be obtained outside the classroom:

> My life experiences have taught me valuable information that I could never learn inside a classroom. I can reflect on those experiences and see where I've been, then decide if I want to go there again. I think all people bring past experiences forward and some people are tainted by those experiences, as a result, they never reach their potential. I don't want to be one of those people.

Shelly talked about a recent experience when she was uncomfortable working with her group in AET Zone:

> Initially when I attended classes in AET Zone, I felt uncomfortable, a feeling that I've learned to accept and deal with. I contacted my instructor and told him that the group work wasn't working; the conversations were too soft and squishy for me. I simply could not relate to the other students and they couldn't relate to me because we were coming from two different worlds.

As adults, Miranda and Shelly reflected on knowledge gained from life experiences; they considered what happened, how they felt, and what they learned. Shelly's recent experience in AET Zone demonstrated that she knew how to tap into her repository of knowledge to deal with problems she faced today.

Age. Miranda and Shelly shared several common traits including being over the age of 25 and delaying enrollment in a Masters program. Miranda talked about life experiences and reflected on her age and returning to school:

> I'm pretty sure that as I get older, I get smarter. I still make mistakes, but I'm making smarter decisions most of the time, like going to school at night so I can earn more money to support my family. At one time in my life school was a joke, you know, the time to have fun, meet guys, and party. But this time when I returned to school, things had changed. I was in school because I had to find a way to survive in the real world. I'd finally grown up and become a serious adult and dedicated student.

Shelly admitted that waiting so long to return to school created new problems for her, at the same time it was necessary to earn another degree:

> I'm old enough to be the mother of my peers, well, most of them, which has created an invisible wall between us. To make matters worse, working all day and going to

> school at night hasn't been easy. I think with age I've learned how to deal with most problems and do what it takes to make them disappear.

Miranda's and Shelly's comments demonstrated that as non-traditional women they had matured and acquired the knowledge needed to address the obstacles they encountered inside and outside of formal education.

During my first participant observation of Miranda in AET Zone, I witnessed her using public text chat to communicate with her peers and to direct questions and comments to her instructor. The class was broken into small groups for final project work and I joined Miranda's group who chose to meet in a private room. Miranda had some technical difficulties at first, but was determined not to be left out; she eliminated the problem by logging out and then logging back into the forum several times. During the meeting, she appeared to be a confident and knowledgeable woman. Miranda constantly interacted with the other group members. She suggested using signs and including URLs to enhance their final project. After the meeting Miranda and I met for a few minutes to discuss her experiences in AET Zone:

> I usually have problems talking with people that I really don't know, but I seem to be quite the chatty woman in AET Zone. I find it's easy in this environment to talk and work with other students on our final project. I'm beginning to think that the courses I take here have a hidden agenda that encourages me to get involved.

During my first participant observation of Shelly in AET Zone, she displayed confidence and used her microphone to communicate with others about their new learning environment. She stated, "It takes more work to get to know each other because we can't see each other's faces or hand gestures." Several students used public text to confirm Shelly's

comments. During this participant observation Shelly continuously enlisted public chat to ask questions and share thoughts relating to the topic of discussion.

As non-traditional women, Miranda and Shelly valued the knowledge they had obtained from life experiences which contributed to their being confident and contributing members of AET Zone.

Ways of making meaning. Ways of making meaning emerged as a major theme in the research process. As the women matured they moved from fairly simple ways of making meaning to more complex ways of making meaning.

For a while, the research participants found it difficult to share their thoughts and opinions; it was a challenge to forget what they learned as children. Miranda spoke in a humble voice:

> Mom always said that a woman's purpose in life was to marry, have babies, and take care of her family. Throughout my life I've attempted to follow her advice and it never worked out. My first marriage was a disaster and ended in divorce; I was too young. Shortly after, I met and later married my second husband and moved to Tennessee. I knew it was too soon to marry again, but I did it anyway. I left him and moved with my sister and her family. For seven months my son, he was seven at the time, and I lived in a storage building in my sister's back yard. I remember thinking how stupid I was for making the same mistake over and over. One day it occurred to me that it might be best to start thinking for myself. A few months later I was working and making enough money to get an apartment.

Shelly shared how as a child she was taught to use logic, but as she grew older her ways of making meaning changed:

> I've always been told to approach life through logic and never ever follow my intuition. This was ingrained in my mind and easily accepted as a young child. As I grew older it became increasingly difficult to use logic and ignore what I was feeling in my gut. When the kids at school told me to walk on the other side of the street, I ignored them and stayed where I was. It really felt good. By the time I was in high school my intuition was controlling everything I did and said. It's been difficult to find a balance between the two [logic and intuition], but I'm learning.

Miranda and Shelly were aware that their ways of making meaning changed over time. As children they were told how to interpret life, but as they grew older they began to think more for themselves. Based on information obtained from interviews with Miranda and Shelly, it became apparent that each woman had moved from simple ways of making meaning to more complex ways of making meaning; AET Zone provided a space for Miranda and Shelly to practice their new ways of making meaning.

Miranda shared how her ways of making meaning was supported by AET Zone:

> In AET Zone, I'm allowed time to think about what is being said and to carefully draw my own conclusions. In my younger years it didn't' matter, time, I mean, because I didn't think for myself. When I'm in AET Zone I don't just blurt something out for the sake of contributing to the conversation. I have time to examine, take things to a deeper level and make my own interpretations.

Shelly commented about how AET Zone is conducive to her current ways of making meaning:

> I find that in AET Zone I'm not forced think and act fast. These days I like to take my time, evaluate what's going on, and carefully decide what it all means. When I'm

meeting other students in one of the private chat rooms in AET Zone we are generally focused on a certain topic. I don't feel rushed and torn in different directions which can sometimes lead to my making hasty decisions. I can take my time, evaluate the information, and even ask questions before drawing conclusions. I also believe that my ability to come back into AET Zone after class or group meetings to post comments presents me with the opportunity to decide for myself what so and so meant by her comment and how I might want to respond to it.

Miranda's and Shelly's responses contribute to my understanding how both women found AET Zone to be a learning environment that encouraged and supported their complex ways of making meaning. Miranda appreciated having more time to think and make her own interpretations. Shelly recognized that working in private chats rooms presented her with time focus and make good decisions. Additionally, the ability to come and go in AET Zone as she pleased allowed her time to think about and interpret what was being said and to eventually make her own comments.

Communication. The work of Belenky et al. (1997) was called to the attention of the research participants and they said they were familiar with the text, but were not experts on the theory. When Miranda was asked to share about her experiences with Belenky et al.'s different perspectives she took a few minutes to think and then adamantly stated: "I've always been a connected knower. I don't even know anyone from the other perspectives. I don't see how any women could view the world from silence or received knowledge." From this response, I knew that Miranda was not familiar enough with Belenky et al.'s (1997) perspectives to sufficiently address the question. Yet, a review of the research data indicated

she had come from several of Belenky et al.'s perspectives at different times in her life. At one point in the research process Miranda stated:

> As a child I didn't share my thoughts with others because I didn't want to sound stupid. Even when I wanted to ask a simple question, I kept my mouth shut for fear I'd sound crazy. As time passed, I began to look at things differently, the way I thought about things changed. Today, I dig deeper and get to the root of what is going on or being said. I feel that it's important for me to see the inside, not just the outside of things. When I share in class it comes from a deep level of thinking, not the same kind of thinking I did as a child.

Shelly reported that she gained considerable knowledge of Belenky et al.'s (1997) perspectives when she read *Teaching and Learning in the College Classroom* (1998) which referenced Belenky et al.'s text, *Women's Ways of Knowing: The Development of Self, Voice, and Mind* (1997). Shelly shared:

> Most of the time it's easy for me to see my peers' points of view; I believe there's no wrong answer when we respond to a question or share our thoughts about an article we read; we just have different interpretations.

Miranda was somewhat familiar with Belenky et al.'s (1997) work, but not enough to identify any perspectives she had come from. Shelly did have some knowledge of the perspectives. From her previous comments, Shelly may have been experiencing subjective knowing as described by Belenky et al. "The subjective knower takes a huge step: She sees truth as subjectified and personal. The subjectivist discovers that each person's life experience gives a different view of reality from that of any other person" (pp. 69-70).

During a discussion focused on communication, Miranda and Shelly reflected on their childhood. As children, both women were taught by their parents to been seen and not heard. Miranda's dad insisted that she be quiet and listen to others, especially adults. She commented, "It took a while for me to realize that it was okay to say what was on my mind." Several times during this study Miranda sarcastically thanked her dad for teaching her not to talk. Even as an adult, she still questions the value of her own thoughts and words.

Shelly reported that when it came to her communication it depended on where she was and who she was with. In her past there were certain situations when it was best to just listen. Shelly reflected on her experiences with face-to-face classrooms and commented, "For a long time I was scared to speak, especially in face-to-face classrooms. My instructors did not invite or encourage me to talk." Shelly stated that the majority of her previous face-to-face instructors set a tone in the classroom that insured that the majority of students would sit in silence.

Identity. Miranda reflected on her communication skills and acknowledged that these skills were connected to her identity:

> I'm not sure how to say this, but I'll try. I've always been someone's wife so my husband at the time always spoke for me. I never spoke because I didn't know what to say, I didn't think for myself back then. It's taken three marriages, but I've finally started paying attention to Miranda, who I was [am], how I wanted [want] to act, and what I wanted [want] to say.

I found that during this study Miranda took it upon herself to direct when and when not to communicate. When we discussed her personal narrative, Miranda admitted that it was difficult to write about her parents' divorce, "I felt like I was reliving the experience when I

tried to write about it". Though not mentioned in her personal narrative, several times Miranda openly spoke about her parents' unwillingness to work out their marital problems.

Communication continued to appear as a theme throughout the research process. Shelly admitted that she did not openly communicate when writing reflective papers:

> This semester I wrote several reflective papers and thought this would be a good time to use my real voice. In each paper I connected the pieces of the courses I've taken up til now and showed my progress as a student. I included details that had to be there for the sake of addressing the assignment guidelines. When I read my reflective papers aloud, the writing often sounded flippant, not genuine. For some reason, I found it difficult to write in my own voice when responding to assignment guidelines.

The research participants' reported that their way of communicating depended on the situation. Miranda found it easier to communicate in person than on paper; Miranda discovered that when writing for her courses, her way of communicating reflected assignment guidelines.

The second participant observation of Miranda that took place in AET Zone was of a small group meeting that discussed the progress each member made on the final class project. Miranda presented the research she conducted; the other group members commented through public chat that the information was factual, impressive, and engaging. Miranda encouraged everyone to use the Internet and include images in their presentations. Throughout the meeting, Miranda collaborated by using public text chat and her microphone. She listened to what other members had to say and many times voiced her own opinion. Additionally, during the meeting Miranda located and imported websites that contributed to the group project.

Shelly's second participant observation took place during a small group meeting with five other non-traditional women in AET Zone. The focus of the meeting was the final class project; the group was primarily concerned with how to set up their assigned room. Once all of the group members had arrived, the avatars' movements slowed down and the video chats started going in and out. As the discussion about the group's presentation proceeded, the technical difficulties gradually vanished. Shelly immediately chimed in with the group discussion and made the following suggestion: "What if we put a poster up with all of our vision statements, something the visitors can see when they first walk in the room. Then we can add our individual projects around the room." Shelly was very vocal and presented her ideas to the group in a professional manner. She was engaged throughout the meeting and using audio and text chats. The group finalized their plans for the room, and Shelly agreed to verify with the instructor if they were supposed to post their websites to AsULearn.

During their small group meetings, Miranda and Shelly were engaged and effectively collaborated with their peers. Each woman appeared confidant and knowledgeable when addressing the other group members; she shared thoughts and ideas that would contribute to the success of the groups final project.

Learning environments. Learning environments were a prominent theme during the research process. The research participants made comparisons that were nearly identical when reporting that from their experiences most face-to-face classes were based on lecture formats and were less effective than classes that met in AET Zone where instructors and students learned together. Miranda spoke about her experiences in face-to-face classes and said:

> I remember meeting in face-to-face classrooms and there was no collaboration, no group projects—no interaction of any kind. The instructors talked and the students listened. Everything about the classrooms was boring, especially the instructors. AET Zone classrooms [classes that meet in AET Zone] are anything but boring, they're usually pretty exciting. The classrooms [classes] are organized but in no way confining; students move around, talk, and pop in and out whenever they like.

Shelly reported that face-to-face classes were too structured and controlled by the instructors:

> From my experience, most face-to-face classrooms [classes] are too controlled and structured. Students can't think for themselves, the instructors do all the thinking and talking. They [face-to-face classes] need to be more like AET Zone classrooms [classes that meet in AET Zone]. The instructors don't stand in front of the class and control everything thing that's said or done, but encourage students to use public chat and to post questions and comments. There's a continuous interaction taking place inside the AET Zone classroom.

In their comparing face-to-face classes with classes that met in AET Zone, the research participants clearly believed that the latter was a more effective learning environment.

Flexibility. The flexibility found in AET Zone is evidence of an environment that allows its members to feel comfortable and to explore their surroundings. Miranda's comments signified the importance she placed on a flexible environment:

> AET Zone has no boundaries. Students walk around and talk about their jobs and what's going on in their lives. I found the environment flexible which encouraged me

to explore my surroundings. Clicking on links and talking to complete strangers is part of the attraction to this space.

When Miranda first entered AET Zone she was intimidated by the unfamiliar environment, but only for a brief time. Miranda commented, "I wasn't used to being in a class that allowed me to go and come as I pleased. At first I was a little uncomfortable, but later had no problems with the lack of structure."

Shelly was familiar with social constructivist 3D immersive environments and considered them not only flexible but liberating. She remarked, "AET Zone is a place where I can freely act and think for myself. Everything about these types of environments is flexible from the instructors to the hours."

Based on the research participants' comments, flexibility is one of the most important features of AET Zone. Both women recognized the ability to come and go and do as they wished within this community. They were not confined by doors, people, or schedules.

Tools. The research data indicated that the research participants believed the synchronous (real time chat, audio, video conferencing, etc.) and asynchronous (discussion board, blogs, etc.) tools found within AET Zone surpassed the kind of tools offered in face-to-face classrooms. They placed importance on the ability to sign into course sites and review materials or work on class projects at their convenience. Additionally, they appreciated a learning environment that contained live audio and video features, where students spent less time judging their peers and more time focusing on their work.

Miranda and Shelly reported being frustrated and at the same time productive members of AET Zone. Miranda commented on the problems she encountered within the environment:

> The only real problems I've had with AET Zone is getting stuck or thrown out. At first I had problems using the microphone, but that was no big deal. At the beginning of the semester if too many people were in the same space our movement and talking slowed down or we were kicked out of the site. Things were better at the end of the semester. Most of the time we used audio and video or text chat during class time and group meetings; we really accomplished a lot.

Shelly was familiar with social constructivist 3D immersive environments and understood that problems do occur:

> Overall, the time I spend in AET Zone is pretty productive. I'm familiar with these types of environments and understand that problems do occur like being thrown out because there's not enough bandwidth. I still get irritated, but know that I just need to log back in. In retrospect I've been very productive within both of these spaces. The tools allow me to work at my own pace with or without my peers. When I'm working I never feel pressured to respond to questions or comments, I tend to give myself time to think and then post my responses the next day.

The minor problems Miranda and Shelly reported with AET Zone were over shadowed by positive comments that reflected how the synchronous and asynchronous tools presented the opportunity for both women to communicate and collaborate effectively in real time and/or anytime.

Presence. The research data showed that the research participants considered AET Zone a social place. They both reported that they often felt alone in traditional face-to-face classrooms- even though their peers and instructors were physically present. There was little, if any, interaction and/or exchanging of ideas. Within AET Zone, Miranda and Shelly were

aware that other people were present which resulted in connection, conversation, and collaboration.

Miranda reported that every time she entered AET Zone, there was someone there, not an actual person, but someone's avatar: "When I'm in AET Zone I feel close to other people, not physically, but mentally; I don't have to touch someone to know they're there."

Shelly found that AET Zone was a social space; the members were approachable and friendly:

> Every time I'm in AET Zone other students and instructors are there. Even if I don't know the other people we still say hello or stop to chat. We talk about things like instructors, school, assignments, work, and even families. It's like going to Wal-Mart; you know that someone will always be there to say hello, answer your questions, or just chat about the weather.

Miranda and Shelly discovered that spending time in AET Zone presented them with the opportunity to sense the presence of others and often interact with them.

Pedagogy. The research participants reflected on the pedagogy of their AET Zone instructors and commented that it was not lecture based as they often experienced in traditional face-to-face classrooms. Both women believed the pedagogy used in AET Zone was geared more towards the students taking control of their learning process. Their comments indicated that the pedagogy found within AET Zone was learner centered, not teacher centered, allowing the research participants to make their own meaning. Based on constructivism, in this environment interaction was encouraged and resulted in the construction of knowledge. When Miranda was asked her opinion of the pedagogy used

within AET Zone, she was not sure what I was referring to. I defined the term and within a few minutes she said:

> I've never really thought about how my instructors teach. I know they don't lecture, thank God, but I don't see them as normal teachers, they're more laid back, more like mentors. I'd say they introduce ideas and then let the students decide what to do with them. Their—what did you call it, pedagogy, yea; their pedagogy seems more about sharing that dictating.

Shelly immediately responded when questioned about the pedagogy found within AET Zone:

> My AET Zone instructors are not like other instructors—they don't lecture. Most of the time, they prompt a conversation and then let the students run with it. My classes are more like open forums, there's no experts just a lot of knowledge going around.

Miranda and Shelly recognized the pedagogy adopted by AET Zone instructors and acknowledged its effectiveness. The instructors did not lecture, but encouraged students to talk which resulted in more interaction among students, thereby helping them learn from each other. Both women appeared comfortable in the environment and used synchronous and asynchronous tools to collaborate and communicate with their instructors and peers. The flexibility, tools, presence, and pedagogy (P2) found within AET Zone supported the learning and development of both research participants. Through the use of presence pedagogy (P2) the relaxed attitudes of the instructors stimulated students to interact which resulted in an exchange of knowledge by all.

The third participant observation of Miranda took place during the last group project meeting in a private chat room located in AET Zone. Each member presented the work he or

she completed for the project. Miranda's presentation was clear and precise; she noted different websites that would provide additional information on her topic and included engaging images. During this observation Miranda appeared to be a confident and well-organized student who was extremely comfortable working within AET Zone.

The third participant observation of Shelly took place during her last final class project group meeting. At the beginning of the meeting, Shelly announced, "It has been great working with all of you. I've thoroughly enjoyed our conversations about school and our families." The focus of this meeting was the room set-up—was it efficient and effective? A couple of students asked Shelly for help with posting websites and she was happy to share her knowledge. Shelly's wall contained several signs that included detailed information about her topic, related websites, images, and cards for the visitors' feedback. The group members started experiencing more technical problems, so they decided that each person would revisit the room at a later time to make final changes to her work. This was a productive meeting, despite technical difficulties such as students getting booted out, slow movement of avatars and public chat, and an overlapping of voices that appeared to be coming from another room. After the other group members signed out Shelly and I talked for a few minutes. She said, "On one hand, I am glad to take a break from class work and spend more time with my family. On the other hand, I will miss talking to the other women I've come to know."

As members of AET Zone, Miranda and Shelly experienced growth and development in several areas including the ability to share their thoughts and opinions, and to interact, collaborate, and communicate with others. When provided the opportunity, both women evolved to a confident member of AET Zone; they demonstrated technical proficiencies and

comfort within the environment that displayed a change in how they viewed themselves and their learning environment.

Summary

As a direct result of their life experiences, the research participants accumulated a repository of knowledge. Early in life, their views of the world and their ways of making meaning were influenced by others, but overtime evolved into their own views and authentic ways of making meaning.

As members of AET Zone, Miranda and Shelly experienced a gradual progression of growth and development in several areas including the ability to share their thoughts and opinions, and to interact, collaborate, and communicate with others. When provided the opportunity, each woman evolved to a confident member of AET Zone; she demonstrated technical proficiencies and comfort within the environment.

The findings of this study resemble Ross-Gordon's (2003) claim that "social and economic forces" have resulted in increased enrollment of non-traditional students in higher education (p. 26). Miranda and Shelly returned to school in order to earn a degree that would lead to a salary increase and/or a better job. As non-traditional women who provided primary financial support for their families, the research participants had to balance their roles as students, wives, mothers, and employees. Ross-Gordon, considered "these roles as assets, both through the social supports they provide and through the rich life experiences that may help adult learners make meaning of theoretical constructs that may be purely abstract to younger learners" (p. 26).

The aforementioned results clearly indicate that the research participants' learning and development was fostered by tools and pedagogy found within AET Zone. A more detailed summary and a discussion of the findings are presented in the next chapter.

CHAPTER V

Analysis

Introduction

This qualitative study examined the learning and development of non-traditional women within social constructivist 3D immersive environments. Purposeful sampling was used to identify participants who were representative of the demographic profile of non-traditional women and could provide data that would answer the research questions. The basis for this discussion are the three themes which include life experiences, ways of making meaning, and learning environments, which emerged while analyzing the data using principles of phenomenology, an attempt to "place our usual understanding in abeyance and have a fresh look at things" (Crotty, 1998, p. 80).

Research Questions

The primary research question "How is the learning and development of non-traditional women fostered by the particular tools and specific pedagogy used within a social constructivist 3D immersive environment?" led to the development of the secondary research question "What happens in in a social constructivist 3D immersive environment, but not in the face-to-face classroom, that affect the learning and development of non-traditional women?"

This chapter will provide an analysis of the findings based on the major themes. It will include the gaps in literature and present the limitations of the study. The conceptual

framework will be revisited and a discussion of the implications determined by the study will be presented. Suggestions for future research are included.

Analysis of the Themes

During the data analysis for this study, three major themes emerged including life experiences, ways of making meaning, and learning environments. Data were obtained from the interviews, participant observations, and reading of the research participants' personal narratives.

The first interview focused on general information about the research participants and confirmed that they fit the criteria of non-traditional women as defined by the study. Following is a discussion the data obtained from the second and third interviews and reading of the research participants' personal narratives.

Life experiences. The research participants' responses during the second interview along with my reading of their personal narratives generated the most data about life experiences. When Miranda was a child, her parents divorced and she blamed herself for what happened, which led to a lack of self-confidence. When her dad moved out, Miranda felt abandoned and unloved. Shelly shared vivid memories of her childhood and being constantly ridiculed by other children; she tried to talk to her parents about what was happening, but their response was always the same, to approach the situation with logic. She perceived her parents as unemotional, making Shelly feel unloved and unheard; a nonentity—resulting in low self-esteem and being insecure.

Flannery and Hayes (2000) found in their study that women's learning takes places in various settings, including the home, and these experiences can lead to a women's self-doubt as a learner. Flannery and Hayes, as well as Ibrahim and Silong (2000), reported that self-

esteem plays an important role in how women learn; if they view themselves as confident and capable learners then they will take control of their learning.

Both research participants mentioned their age several times during the second interview and in their personal narratives. As children, they were subjected to life experiences that resulted in knowledge that could be referenced later in life. At the time of their enrollment, Miranda and Shelly were in their mid-forties. Miranda hoped her actions would reflect how much she had matured since her first enrollment in college—would she be serious about learning the second time around? Miranda needed an increase in salary to support her family, so it was important for her to earn a higher degree. She believed that with age she had become a smarter and more responsible person. Shelly confirmed that returning to school late in life had created new problems for her, but she would deal with those problems. As the primary financial support for her household, Shelly needed to obtain a higher degree to receive an increase in her current salary. She found that being older than the majority of her peers had placed a wall between them. At first, this appeared to be a problem, but in the past she had learned how to deal with such situations and knew what to do.

Ways of making meaning. The focus of the second interview, the research participants' development of self, voice, and mind, was influenced by Belenky et al.'s (1997) perspectives. Miranda's and Shelly's interview responses and personal narratives demonstrated that their ways of making meaning evolved over time. As discussed by Belenky et al. (1997) and Tarule (1988), each research participant experienced a change in the way she viewed herself, her mind, and the world she lived in.

As a child, Miranda's ways of meaning were passed down from her mother; she admitted that it was more important to conform to her mother's wishes than her own.

Miranda's mother instilled in her that a successful woman was one who married, had babies, and cared for her family. Miranda discovered that her mother's meaning of a successful woman was not working for her. By the age of 27 Miranda had married and divorced twice, she was on welfare, and living with her son in a storage building. This was a significant event that resulted in Miranda developing a sense of self which was accompanied with her own way of viewing the world and making her own meaning. Shelly talked about her ways of knowing being grounded in logic, not by choice, but by the demands of her parents. As she matured, a balance between logic and intuition was sought. Shelly's ways of knowing slowly changed, as did her interpretations of who she was and the life she was living.

Learning environments. During the third interview and participant observations extensive data that focused on learning environments was collected. Both research participants had experience with traditional face-to-face classrooms and social constructivist 3D immersive classrooms, but preferred the latter. Miranda acknowledged that from her experience face-to-face classrooms were boring and so were the instructors; there was no collaboration, group projects, or interaction. She made favorable comments about AET Zone that indicated the classes were exciting and never confining; Shelly appreciated coming and going as she pleased. Shelly characterized face-to-face classrooms as controlled and structured; instructors did all of the thinking and talking. On the other hand, she felt that AET Zone instructors had relinquished control and encouraged students to share their thought which led to continuous student-student and student-instructor interaction. The research participants agreed that from their experiences, many face-to-face classrooms were based on lecture formats; therefore, they were less effective than AET Zone classrooms where students were encouraged to interact and communicate with their peers.

Miranda's and Shelly's experiences within AET Zone are a direct result of the environment being firmly designed around and grounded in social constructivism. As members of AET Zone, instructors and students, regardless of their locations, come together and participate in the "social activity of learning" (Bronack et al., 2006, p. 219).

There were certain features that both research participants were looking for when choosing a higher education program of study. One of the most important was flexibility, a program that would work with their demanding schedules. Both women reported that the design of AET Zone encouraged self-paced learning. Through the use of synchronous and asynchronous tools, the research participants could work independently at times they found convenient. The versatility of AET Zone made it an ideal learning space for the research participants and their demanding schedules.

Miranda acknowledged that AET Zone had no boundaries; at first she was uncomfortable with the lack of structure—the limitless possibilities, but eventually appreciated the opportunity to take control of her learning. Through interaction with others, planned and serendipitous, Miranda discovered that learning required more than one person. Within AET Zone learning is "reciprocal and recursive in nature. Novices prompt growth in so-called experts and vice versa" (Bronack et al. 2008b, p.64). Shelly found AET Zone to be flexible and considered her time within the environment as liberating. She welcomed the freedom to act and think for herself within an environment that not only encouraged, but supported her learning through the use of technology.

The flexibility Miranda and Shelly found within AET Zone is one of the attributes of an environment that is guided by a conceptual framework built on social constructivism which supports the development of learning communities. Unlike students within traditional

face-to-face classrooms, AET Zone students "move freely between and among course areas according to their needs and interests and guided by timelines from projects, sharing (discussion, brainstorming entries, etc.), and other prompts that dictate the flow of the class" (Bronack et al., 2006, p. 227-228).

Throughout this study, the research participants made brief, but specific comments that confirmed the importance they placed on the synchronous (real time chat, live audio and video, etc.) and asynchronous (discussion boards, blogs, etc.) tools found within AET Zone. Miranda and Shelly appeared confident when they enlisted these tools to communicate, interact, and collaborate with their instructors and peers.

Miranda confirmed that during classes and small group meetings in AET Zone a good portion of work was accomplished by using live audio and video or text chat. During the participant observations, she appeared confident while using the synchronous and asynchronous tools. Generally, before or after a small group meeting, Miranda was observed reviewing documents the instructor or her peers had posted on a wall. When her group moved to a private room, she navigated the environment with comfort and ease. Miranda shared knowledge about AET Zone's tools with her peers and demonstrated how to use the display panels and import URLs. While working within AET Zone, she took the time to explore and view the work posted by other students. Miranda mentioned during our second interview that when she was in AET Zone effective learning took place through instructor-student and student-student interaction, communication, and collaboration.

Shelly was somewhat of a professional when it came to social constructivist 3D immersive environments, and AET Zone was no exception. During the participant observations she was proficient at using public text chat and her microphone to

communicate. Prior to several meetings, Shelly demonstrated control of her learning process; she posted information signs and cards on the walls to encourage her peers to collaborate with her on certain ideas. It was obvious that Shelly preferred to think before responding to questions and/or comments made by her instructors and peers. She usually waited a day before going back into the forum and posting her responses.

The design of AET Zone is supported by the principles of social constructivism. Interaction among members is encouraged through the use of synchronous and asynchronous tools that allow users to "engage in meaningful activity with others-peripherally, at first, but at increasing levels of complexity as the learner develops into a more experienced participant" (Bronack et al., 2006, p. 222).

As members of AET Zone, students are "aware of the presence of their instructors and colleagues when logged into the world; indeed, through the use of avatars, each can 'see' the other" (Bronack et al., 2008b, p. 61). The research participants considered being with others, or what Bronack et al. refer to as the role of presence, an important feature of AET Zone. The sense of presence and the use of avatars help distinguish social constructivist 3D immersive environments from other online technologies. Effective communication and interaction takes place within AET Zone because users are aware of others that come from "being emotionally and cognitively immersed in a shared environment" (Bronack et al., 1997, p. 264). Through the use of avatars, users communicate in real time. Additionally, the ability to create and navigate their avatars and make non-verbal gestures results in effective communication. According to Bronack et al. (1997), "the role of presence serves as yet another reminder that successful technologies are less about the tool and more about the kinds of activities the tool enables" (p. 264).

Miranda enjoyed conversing with others within AET Zone; she appreciated the fact that there was always someone [avatar] in the forum when she logged in. Though she could not physically see or touch the other members, Miranda knew they were there with her. This was a direct result of the users being mentally and emotionally involved in the same environment. Like Miranda, Shelly continuously experienced the company of others when she was in AET Zone. Even if she did not know them, socializing was always an option. Miranda confidently acknowledged their presence and usually chatted about things they had in common such as instructors, assignments, and even families.

The research participants recognized presence as an important component of AET Zone. Their comments support Bronack et al.'s (2008a) claim that "regardless of the design of a virtual space, effective communication will only take place when there is a sense of sharing the space with others" (p. 262). Continuous presence of others is a crucial feature of learning environments where teachers use Presence Pedagogy (P2).

Both research participants placed importance on the pedagogy found within AET Zone. Though unfamiliar with the name, P2, the women acknowledged that the instructors did not control their learning, but portrayed mentors who shared knowledge. Instructors using P2 characterize it as the "set of skills, abilities, and dispositions one employs when helping others learn. This skill set often manifests itself as a collection of strategies, techniques, and styles for doing so" (Bronack et al., 2008b, p. 61).

Within AET Zone, both research participants found the freedom to take control of their learning, something they never experienced in face-to-face classrooms. Miranda claimed that her AET Zone instructors were more like mentors than teachers. They shared

ideas and encouraged her decide what to do with those ideas. Shelly stated that her AET Zone instructors did not lecture, but were more about sharing knowledge.

AET Zone resembles the social constructivist 3D environments that Eschenbrenner, Nah, and Siau (2008) report, will allow people working in the field of education to reach their goals of "interaction, engagement, and collaboration" which characterizes a learner-centered environment (p. 91). In support of Huang's (2002) study, the research participants found that within AET Zone they could construct knowledge—take control of their learning. AET Zone is a social constructed 3D immersive environment where learning is a "contiguous process that exist each time people willfully interacts with each other in the world around them" (Bronack et al., 2006, p. 221). Interaction is encouraged through the use of synchronous and asynchronous tools. Presence Pedagogy supports a democratic process where students are involved in the creation of knowledge by connecting old information with new information.

Gaps

The literature review for this study demonstrates that research has been conducted that focuses on the following topics: education and non-traditional women, adult learner development theories, higher education institutions, non-traditional students and technology, and educational uses of social constructivist 3D immersive environments; however, there is a gap in research that addresses non-traditional women's learning and development within social constructivist 3D immersive environments.

In an effort to close the aforementioned literature gap, non-traditional women were placed at the center of this study and an examination of their learning and development within AET Zone was conducted. Data obtained from the study identified certain tools,

pedagogy, and what happens within this community promote non-traditional women's learning and development.

Limitations

This study's demographics are limited in one way. The research participants consisted of current students in one specific program, Appalachian State University's Instructional Technology/Computers MA Program, and did not include students or programs from other higher education institutions.

Revisiting the Conceptual Framework

As the population of non-traditional women continues to grow in higher education institutions, understanding how synchronous and asynchronous tools and Presence Pedagogy found with social constructivist 3D environments foster the learning and development of such students will contribute to closing the literature gap in research that addresses non-traditional women's learning and development within social constructivist 3D immersive environments. In this study, the interviews, participant observations, and personal narratives were analyzed from a social constructivist epistemological framework. An understanding of the research participants' experiences was formed by looking for patterns of meaning on the basis of the data collected. The principles of constructivism were effective for this study and could serve well as the framework for future studies that address the same topic.

Implications

The findings from this study have implications for several entities including: enrollment and retention of non-traditional women in higher education leadership programs, higher education leadership course curriculum and program designers, non-traditional

women, higher education institutional programs and student services, and AET Zone and Presence Pedagogy. Implications for each entity are discussed separately.

Implications for the enrollment and retention of non-traditional women in higher education leadership programs are evidenced in this study. When assessments are continuously administered to determine the achievement of non-traditional women within 3D immersive environments it is feasible for the data to provide institutions and instructors with concrete results and opportunities that can lead to improvement in working with this population of students.

The second implication identifies the need for higher educational leadership course curriculums and program designers to consider the relevance of non-traditional women's life experiences and educational achievements. When deciding what educational purposes a university should attain, curriculum planners could find it beneficial to take into consideration how non-traditional women connect to certain educational purposes. Effective student-centered curriculum patterns can be based on non-traditional women's purposes for enrolling in higher education including: better job opportunities, to earn higher salaries, and to increase self-esteem. Higher education program designers might find it beneficial to acknowledge the specific needs of non-traditional women and address those needs, increase communication, and revise policies that limit participation of this student population.

The third implication is especially beneficial to non-traditional women aspiring to enroll in higher education. It includes higher education institutional programs and student services specializing in the needs of this student population. Non-traditional women could benefit from seminars, workshops, and student support service counselors that focus on meeting the special needs of this student population and addresses such issues as time

management, perceived barriers to achieving academic goals, stress management, and using 21st century technology. Seminars and workshops could be scheduled during the day, evening, and online for students whose schedules do not permit on-campus participation. Student support service counselors that have flexible hours such as extend working hours (past 5:00 p.m.) and offer an online chat line could be demonstrating support for the enrollment of non-traditional women.

The final implication from the findings of this study is the development of AET Zone and Presence Pedagogy (P2). It is important to address how the resources in AET Zone, such as synchronous and asynchronous tools, can be developed to increase the amount of quality collaboration and interaction among its members. AET Zone does provide a space where non-traditional women can be comfortable in the learning process, but it is important to find additional ways for the environment to encourage those members that fear the unknown to step out of their comfort level and embrace that which they are unfamiliar. The sense of being with others found in AET Zone promotes collaboration and active learning which is employed by P2. The potential of P2 may, or may not, have been discovered by the instructors, but it fails to be seen if non-traditional women are taking advantage of how this style of pedagogy can support their learning and development. While instructors are forfeiting control to become knowledge sharing mentors, it is of the utmost importance that non-traditional women recognize and take full advantage of the opportunity P2 provides for them to take control of their learning and construct their own knowledge.

Suggestions for Further Research

The first suggestion for future study is to conduct further research focused on how social constructivist 3D immersive environments can better meet the needs of non-traditional

women. A study is recommended that identifies the issues non-traditional women bring with them to higher education including time and stress management, low self-esteem, barriers, technological challenges, etc., and how effectively higher education institutions addresses those issues through curriculum, programs, pedagogy, student services, and faculty development and training.

The second suggestion for future research is to study the enrollment and retention of non-traditional women in courses that meet in social constructive 3D immersive environments as opposed to their enrollment and retention in courses that meet in traditional face-to-face classrooms and web-based online courses. A study of this nature could examine what contributes to the retention of non-traditional students within these environments.

The third suggestion for future research is to study how effectively higher education curricula, programs, and pedagogy are meeting the expectations of non-traditional women. Studies of this kind could compare the goals of social constructivist 3D immersive environments with the aforementioned expectations of non-traditional women.

The final suggestion is to conduct research that renews and/or modifies the features found in social constructivist 3D immersive environments for effectiveness in supporting the learning and development of non-traditional women. This type of study could examine how to make the aforementioned features more effective and introduce new components that would engage and support the learning and development.

Summary

This study focused on the learning and development of non-traditional women within AET Zone, a social constructivist 3D immersive environment. Data collection consisted of interviews, participant observations, and participants' personal narratives. A consistent

finding in this study was the three major themes which included life experiences, ways of making meaning, and learning environments.

These findings, because I chose two non-traditional women and reported what was helpful to them, do not necessarily mean than more traditional students do not have similar experiences.

Based on the findings of this study, constructivism, one of the main components of AET Zone, can help reduce the barriers many non-traditional women face by providing a flexible learning environment where these women are presented the opportunity to take control of their learning. The synchronous and asynchronous tools found within AET Zone encouraged the research participants to interact, communicate, and collaborate with others. Both women acknowledged that AET Zone extended beyond traditional face-to-face classrooms and met their needs with the type of flexibility and pedagogy that allowed them to work towards educational goals without sacrificing their personal and professional lives.

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APPENDIX A

Research Description Provided to AET Zone Instructors

(IRB approval granted on 10/29/09 – Study #10-0073)

While the developmental models of women's knowledge have been extensively researched and critiqued (Belenky, Clinchy, Goldberger, & Tarule, 1997; Gilligan, 1982; Jordan, 1997) little research has been conducted on non-traditional women's learning and development within social constructivist 3D immersive environments.

In order to meet the needs of increased numbers of adult women learners returning to postsecondary education, the purpose of my study is to examine non-traditional women's learning and development within AET Zone.

As the primary investigator of this study, I am seeking two non-traditional female student volunteers that have one or more of the following characteristics: they are over the age of 25, delayed enrollment in a master's degree program, worked full-time while attending school part-time, and have dependents including a child and a spouse (Aleman & Renn, 2002; Choy, 2002; Hsu & Hamilton, 2010; Horn & Carroll, 1996). The volunteers I seek are enrolled in and are active members of a course(s) that meets in AET Zone. This study will take approximately twelve months to complete.

For an undetermined amount of time, I will observe participants within AET Zone as they actively participate as members of the community. I will ask for your permission to observe some of the classes that the participants are members of (prior to chosen class time). A request for permission to observe your class can be found at the end of this Research Description. In the classes I observe, the anonymity of non-participants will be respected (Appendix D). In addition, I will conduct an undetermined number of open-ended interviews

with the participants (within and outside of AET Zone) that will last approximately thirty to forty-five minutes each. Each participant will be asked to write a personal narrative that addresses her learning experiences and development from childhood to adulthood. Participants will be asked to commit approximately ten hours of their time to this study.

I ask that you review the attached Lay Summary (Appendix B) and briefly explain the contents of the summary to your students that are enrolled in a course(s) that meet in AET Zone. I request that you ask for volunteers that would like to participate in the study and then provide those students with my contact information (yorklg@appstate.edu). Upon receipt of the emails from students that are interested in participating in the study, I will contact each student to set up a time and place to meet and discuss the study in further detail by reviewing the Lay Summary and Consent Forms. After meeting with volunteers, the students' names that best fit the criteria of a non-traditional woman will be placed in a hat and two students will be randomly drawn to participate in the study. Upon selection, the students will be contacted via email and asked to meet with me in person to review the Lay Summary and Consent Forms.

For further information, you can contact me at yorklg@appstate.edu or 828-963-4972.

Request for Permission to Observe Class

(Read carefully - sign and date)

I hereby give Linda Gail York, the researcher, the right and permission to observe my class(s) that meet in AET Zone, Appalachian State University, Reich College of Education, Department of Leadership and Educational Studies, Boone, North Carolina, for use in the her documented study of non-traditional women's learning and development within social constructivist 3D immersive environments without further consideration, and I acknowledge right to edit textual material at her discretion.

I also understand that any documentation containing from her observation may be distributed at large, including, but not limited to, her study and Dissertation on non-traditional women's learning and development within social constructivist 3D immersive environments. I waive and release any and all claims related to the publication or other use of such material that I might now or hereafter have against Linda Gail York.

I have been given sufficient time to review and seek explanation of the provisions of this Release and Waiver, I have carefully read and understand them, and I agree to be bound by them. I voluntarily and irrevocably give my consent and agree to this Release and Waiver.

_____ _____

Course Number/Section Course Title

_____

Social Constructivist 3D Immersive Environment Course(s) Meeting Place

_____ _____

Signature of Instructor Date

APPENDIX B

Lay Summary

You are invited to participate in a research study to learn about the learning and development of non-traditional women's within social constructivist 3D immersive environments. This research is being conducted as part of my dissertation research at Appalachian State University, Reich College of Education, Department of Leadership and Educational Studies in Boone, North Carolina.

I am asking you to participate because I believe that your ideas and feelings as a non-traditional student that actively participates in a social constructivist 3D immersive environment class would help me to better understand the learning and development of non-traditional women within this learning environment. There are no foreseen risks to you as a participant of this study. The benefits to you for doing this study is that you can explore different aspects of being a non-traditional woman, and you might enjoy sharing ideas and feelings, as well as hearing those of others, about learning in social constructivist 3D immersive environments. In addition, your participation in this study may help me and others better understand what we can do to improve our approaches to working with non-traditional women in social constructivist 3D immersive environments, as well as, discovering changes that might be made in the design of social constructivist 3D immersive environments that would encourage and help produce effective learning.

I will be the only person who knows that you are participating in this study. As a researcher, I will protect your rights and privacy. When referencing interviews, surveys, chat room discussions, personal narratives, participant observations, and/or any type of communication, I will protect your anonymity by using pseudonyms (a fake name) unless

you consent to my using your real name. When I interview you, I would like your permission to tape-record, videotape, photograph, and take notes to remind me about our conversations. I will be the only one who listens to or views these tapes, videos, and notes, and when I am not using them they will be kept in a locked cabinet that only I have access to. After completing this study, all tapes will be destroyed. I would, however, like the photographs to be included in the defense of my dissertation. If I use your photograph, a pseudonym will identify the image unless you consent to my using your real name. In some cases, I might pair your photographs with what you said about learning in a social constructivist 3D immersive environment. You may choose not to allow me to take photographs of you while you participate in this study. At the end of this summary there are three forms of consent, one for photographs, one for me to record what I observe you doing and your words during the duration of the study, and one for consent to use your real name or not to use your real name but to assign you a pseudonym.

As a participant of this study you will be asked to commit approximately ten hours of your time to the study. I will spend time with you and talk with you over the course of the semester. The first interview will last for approximately thirty to forty-five minutes and I will ask questions that connect to learning in social constructivist 3D immersive environments. An example of the questions I will ask is "How do you feel about being a student in a social constructivist 3D immersive environment?" Next, I will spend time observing you in AET Zone as an active member of the community. Next, I will ask to have an informal face-to-face meeting with you in a convenient location to discuss your experiences as a student in face-to-face classrooms and in a social constructivist 3D immersive environment. I will ask you to write a brief personal narrative that addresses your learning experiences and

development from childhood to adulthood. Towards the end of the study I will meet with you to discuss any comments, concern, or thoughts you have regarding being a student in a social constructivist 3D immersive environment.

The most important thing for you to remember while you are participating in this study with me is that there are no right or wrong actions or answers. I am looking for your opinions, ideas, and feelings about your learning and development in and outside of social constructivist 3D immersive environments.

You have the right at any time during this study not to participate with any penalty or loss of benefits. This decision is yours and will not affect any future contact you have with Appalachian State University.

If you would like to participate in this study or require additional information contact Gail York at yorklg@appstate.edu.

APPENDIX C

Photograph, Video, and Audio Recording – Release and Waiver Consent

(Read carefully - sign and date)

I hereby give Linda Gail York, the researcher, the right and permission to use and/or publish and/or copyright still pictures, video and audio recordings and textual description of me for use in the her documented study of non-traditional women's learning and development within social constructivist 3D immersive environments without further consideration, and I acknowledge right to edit, crop, or treat such audio, video, or textual material at her discretion.

I also understand that any documentation containing my image may be streamed online, and may be distributed at large, including, but not limited to, her study and Dissertation on non-traditional women's learning and development within social constructivist 3D immersive environments. I waive and release any and all claims related to the display, publication or other use of such material that I might now or hereafter have against Linda Gail York.

I have been given sufficient time to review and seek explanation of the provisions of this Release and Waiver, I have carefully read and understand them, and I agree to be bound by them. I voluntarily and irrevocably give my consent and agree to this Release and Waiver.

_____ _____

Signature of Participant Date

APPENDIX D

Non-Participant Consent to Observe

(Read carefully – circle yes or no - sign and date)

I, Linda Gail York, am observing one or more students in your class and may inadvertently observe you. I will not include any of your actions in my research. Will you give me permission to observe the class? Circle one: Yes No

Course: _____ Meeting Place: _____

_____ _____

Signature of Non-Participant Date

APPENDIX E

First Interview Format

First Interview with: _____ Place: _____

Date: _____ 2010 Day: _____ Time: Start - _____ End - _____

I want to thank you for taking the time to volunteer for this study. As the primary researcher I feel it is vital to the success of non-traditional women better understand their learning and development within AET Zone, Appalachian State University, Reich College of Education, Department of Leadership and Educational Studies, Boone, North Carolina.

Linda "Gail" York

Student's Name:_____

Telephone #: _____ Cell #:_____

Home Address: _____ _____

University: Appalachian State University

Program: _____

Year in school: Freshman Sophomore Junior Senior Graduate Year 1 2 3 4

Non-Traditional Women's Characteristics:

___25 years of age or older _____

___Delayed enrollment in a master's degree program _____

___Attends postsecondary education on a part-time basis _____

___Works full time while enrolled part-time in higher education course(s) _____

____ Dependents other than a spouse_____

___Active member of a course(s) that meets in AET Zone

Course Title/Number: _____ Instructor: _____

Meets: Monday Tuesday Wednesday Thursday Friday Saturday

Time: _____

Comments: _____

_____

_____

Next Meeting: AET Zone Skype Date: _____ Time: _____

APPENDIX F

Second Interview Format

Second Interview with: _____ Place: _____

Date: _____2010 Day: _____ Time: Start - _____ End - _____

Throughout the participant observations that took place AET Zone I have noticed that you are an active member of the community. You appeared to be confident while interacting with your peers within this social constructivist 3D immersive environment. Based on my observations, I consider you a strong and confident non-traditional woman.

Review #1: Women's Ways of Knowing (Belenky et al., 1997)

One of the sources for my dissertation is *Women's Ways of Knowing: The Development of Self, Voice, and Mind* (Belenky M., Clinchy, B. M., Goldberger, N. R., & Tarule, J. M. (1997). Belenky et al. (1997) created "five different perspectives from which women view reality and draw conclusions about truth, knowledge, and authority" (p. 3).

Silence: Women experience themselves as mindless and voiceless and subject to the whims of external authority. Learning Preference: Being directed

Received Knowledge: Women conceive of themselves as capable of receiving, even reproducing knowledge from all-knowing authorities but are not capable of creating knowledge as their own. Learning Preference: Listening, reproducing knowledge

Subjective Knowledge: A perspective from which truth and knowledge are conceived as personal, private, subjectively known, and intuited. Learning Preference: Experiencing; intuiting

Procedural Knowledge: Women are invested in learning and in applying objective procedures for obtaining and communication knowledge. Learning Preference: Rational inquiry

Procedural Knowledge: Women are invested in learning and in applying objective procedures for obtaining and communicating knowledge. Learning Preference: Rational inquiry

Constructed Knowledge: Women view knowledge as contextual and they consider themselves creators of knowledge. They value subjective and objective strategies of knowing. Learning Preference: Rational and intuitive

For the purpose of this interview this data was taken in part from Women's Ways of Knowing: The Development of Self, Voice, and Mind. Belenky M., Clinchy, B. M., Goldberger, N. R., & Tarule, J. M. (1997), New York: Basic Books. The research participants were given time to review a summary of Belenky et al.'s (1997) text prior to this interview.

Questions

1. As a non-traditional student, what aspects of AET Zone support or deter your development of self, voice, and mind?
2. When you first entered AET Zone which of Belenky et al.'s perspectives were you coming from (silence, received knowing, etc.)?
3. Within AET Zone, did you gradually move from less complex ways of thinking to more complex ways of thinking?
4. Do you feel that as an adult your learning and development is the same within face-to-face classrooms as in AET Zone?

APPENDIX G

Third Interview Format

Third Interview with: _____ Place: _____

Date: _____ 2010 Day: _____ Time: Start - _____ End - _____

The primary research question was "How is the learning and development of non-traditional women fostered by the particular tools and specific pedagogy used within a social constructivist 3D immersive environment?" The secondary research question was "What happens in a social constructivist 3D immersive environment, but not in the face-to-face classroom, that affects the learning and development of non-traditional women?"

Discuss the term development which is broadly defined as a process of qualitative change in attitudes, values, and understandings that adults experience as a result of ongoing transactions with the social environment, occurring over time but not strictly as a result of time (Nemiroff & Colarusso, 1990, p. 98; Tennant & Pogson, 1995, p. 199; Weathersby & Tarule, 1980).

Questions

1. How did your childhood affect your learning and development?
2. Could you share a little about your learning and development within AET Zone?
3. How do certain experiences, activities, and values of presence in AET Zone allow you to use life experiences to the benefit of your learning?
4. Is there anything about AET Zone that has made it easier for you to learn? Explain.
5. Within AET Zone, who do you feel has control of the learning process (instructor /student)? Explain.

6. Within the face-to-face classroom, who do you feel has control of the learning process (instructor/student)? Explain.
7. Have you written or are you willing to write and share with me a personal narrative to will be included in my dissertation that reflects your life as a child, educational background, and how your childhood and adult life has affected your learning and development, etc.? (A pseudonym will be used).

   Comments:

APPENDIX H

IRB Approval

Appalachian
STATE UNIVERSITY

INSTITUTIONAL REVIEW BOARD
Office of Research Protections
ASU Box 32068
Boone, NC 28608
828.262.2130
Website: http://www.orsp.appstate.edu/protections/irb
Email: irb@appstate.edu
Federalwide Assurance (FWA) #1076
IRB Reg. #00001458

To: Linda York
College of Education
CAMPUS MAIL

From: _____
Dr. Timothy Ludwig, Institutional Review Board

Date: 10/29/2009

RE: Notice of IRB Approval by Expedited Review (under 45 CFR 46.110)

Study #: 10-0073

Study Title: Learning Process and Development of Non-Traditional Women within Three-Dimensional Immersive Worlds for Learning
Submission Type: Initial
Expedited Category: (7) Research on Group Characteristics or Behavior, or Surveys, Interviews, etc.

Approval Date: 10/29/2009
Expiration Date of Approval: 10/28/2010

This submission has been approved by the Institutional Review Board for the period indicated. It has been determined that the risk involved in this research is no more than minimal.

Investigator's Responsibilities:

Federal regulations require that all research be reviewed at least annually. It is the Principal Investigator's responsibility to submit for renewal and obtain approval before the expiration date. You may not continue any research activity beyond the expiration date

without IRB approval. Failure to receive approval for continuation before the expiration date will result in automatic termination of the approval for this study on the expiration date.

You are required to obtain IRB approval for any changes to any aspect of this study before they can be implemented. Should any adverse event or unanticipated problem involving risks to subjects occur it must be reported immediately to the IRB.

CC:
Amelia Cheney, College Of Education

APPENDIX I

IRB Renewal

Linda York

<yorklg@email.appstate.edu>

IRB Notice

1 message

IRB <irb@appstate.edu> **Tue, Sep 21, 2010 at 9:59 AM**
To*: yorklg@appstate.edu*
Cc: *cheneyal@appstate.edu*

To: *Linda York*
College Of Education
CAMPUS MAIL

From: *Dr. Timothy Ludwig, Institutional Review Board*

RE: *Notice of IRB Approval by Expedited Review (under 45 CFR 46.110)*

Date: *9/21/2010*

Study #: *10-0073*

Study Title: *Learning Process and Development of Non-Traditional Women within Three-Dimensional Immersive Worlds for Learning*

Submission Type: *Renewal*
Expedited Category: *(7) Research on Group Characteristics or Behavior, or Surveys, Interviews, etc.*

Renewal Date: *9/21/2010*
Expiration Date of Approval: *9/20/2011*

This request for renewal has been approved by the above Institutional Review Board for the period indicated.

Investigator's Responsibilities:

Federal regulations require that all research be reviewed at least annually. It is the Principal Investigator's responsibility to submit for renewal and obtain approval before the expiration date. You may not continue any research activity beyond the expiration date without IRB approval. Failure to receive approval for continuation before the expiration date will result in automatic termination of the approval for this study on the expiration date.

You are required to obtain IRB approval for any changes to any aspect of this study before they can be implemented. Should any adverse event or unanticipated problem involving risks to subjects occur it must be reported immediately to the IRB. Best wishes with your research!

CC:
Amelia Cheney, College Of Education

VITA

Linda Gail York was born in Wilmington, North Carolina on January 20, 1953. She is the third of four daughters born to Edmund Bill and Della Fay York. Gail dropped out of high school at the age of sixteen and a year later earned her GED. At the age of thirty-two, she began taking undergraduate courses at Cape Fear Community College and later transferred to the University of North Carolina Wilmington (UNCW). Gail has worked for the University of North Carolina School System as staff and/or faculty member since 1990.

Gail completed her Bachelor of Arts degree in English – Creative Writing (1995) at UNCW. She earned her Master of Arts degree in Higher Education Administration (2002), Educational Specialist degree in Higher Education (2006), and Teaching Certificate in Rhetoric and Composition (2007) from Appalachian State University (ASU), Boone North Carolina. Gail was accepted into the Ed.D. Educational Leadership program at ASU in August of 2007 and completed the degree in 2012.

Gail's research interests include the learning and development of traditional and non-traditional students, higher education social constructivist 3D immersive environments, rhetoric and composition, learning and teaching styles, and educational technology.